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CONGENITAL DISLOCATION OF THE HIP IN THE NEWBORN AND IN EARLY POSTNATAL LIFE

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No other chapter of medicine presents greater possibilities in preventive pediatric-orthopedic medicine than congenital dislocation of the hip. The concept of the pathogenesis of this serious and disabling condition has changed considerably during recent years. Dislocation is not the primary morbid anatomic feature; it is a secondary phenomenon and need not necessarily occur. The primary anatomic and physiologic abnormality is delayed and inhibited ossification of the cartilaginous structures which enter into the formation of the hip joint or innominate bone and femur. The original shape and form or configuration of the cartilaginous hip joint during embryonic, fetal and neonatal life may be normal, but because of delayed ossification the socket is pliable, inadequate, yielding and deformable.

The term congenital dysplasia of the hip joint, first used by Hilgenreiner [1] of Prague, Czechoslovakia, in 1925, is a logical and accurate term to describe the primary pathologic state. The word dysplasia means abnormal growth regardless of etiologic basis and of whether the cause or causes of the abnormal growth are intrinsic or extrinsic.

Sequelae of the primary dysplasia are recognized and treated. One of the many sequelae is congenital dislocation or luxation of the hip joint. Complete displacement of the femoral head from the inadequate acetabulum, or dislocation, is not a common clinical problem; partial displacement or subluxation is a common cause of serious hip joint disability during early and late adult life.

Subluxation and dislocation have a common etiologic basis, but they present different clinical and roentgen observations. Both are sequelae of primary hip joint dysplasia or inhibited ossification and osteogenesis of the cartilaginous structures of the hip joint. The cause of the dysplasia is not known with certainty. Probably there are several primary etiologic factors, including genetic, biologic and mechanical problems, and also secondary etiologic factors such as fetal posture, nutrition, prematurity, bandaging and hormonal influences.

The most convincing evidence that subluxation and dislocation are related is the fact that the two entities frequently are present in the two hip joints of individual patients during infancy, childhood, adolescent and adult life (fig. 1).

Today, in this country, dislocation of the hip joint generally is neither recognized nor treated until months or several years after the function of weight bearing begins. Subluxation as a rule is not recognized until adult life, and frequently its relationship to dislocation is never appreciated. These subluxated hips in adults with superimposed osteoarthritis are often classified as infection, tuberculosis, malum coxae senilis, arthritis deformans or degenerative hip disease of unknown cause.

No one is more impressed by the discouraging results of treatment of these older patients than the orthopedic surgeon. Improved results of treatment should not be expected by newer methods and technics of open or closed surgery. As the great surgeon Vittorio Putti,[2] of Bologna, Italy, stated more than twenty years ago, "one must reduce the age limit (for beginning treatment), indeed abolish it completely, and fully accept that principle which all orthopedic surgeons follow in the treatment of all congenital deformities and which one sees no reason to repudiate in that of congenital dislocation of the hip—that is, to begin treatment the very moment the deformity is observed, even if that be on the day of birth" (figs. 2 and 3).

Results of treatment are not encouraging in the great majority of patients because the surgeon treats secondary and often gross and irreversible pathologic sequelae involving the acetabulum, femoral head, neck and shaft, capsule, ligaments, muscles, tendons, nerves and blood vessels. One should never teach that the earliest clinical observations of congenital dislocation of the hip are limp, shortening of an extremity, telescoping, lordosis and a positive Trendelenburg sign. They are late clinical observations, and indeed very late, even though the patient be only 1 year of age. The purpose of this paper is to describe (1) the earliest clinical observations, (2) the earliest roentgen features and (3) the earliest treatment.

CLINICAL OBSERVATIONS

The clinical observations vary with each infant, but all depend on (1) the degree of postural shortening or contracture of the adductor muscles, tendons and fasciae, (2) plasticity of the cartilaginous acetabulum, (3) relaxation of the capsular and musculotendinous structures of the hip joint, (4) the degree of displacement of the femoral head from the acetabulum, (5) the age of the infant and the age of the femoral head displacement, (6) the degree of unlateral or bilateral hip joint dysplasia and (7) sequelae.

† Dr. Hart died on July 12, 1950.

1. Hilgenreiner, H.: Zur Frühdiagnose und Frühbehandlung der angeborenen Hüftgelenkverrenkung, Med. Klin. **21**: 1385-1388; 1425-1429, 1925.

2. Putti, V.: Early Treatment of Congenital Dislocation of the Hip, J. Bone & Joint Surg. **11**: 798-809, 1929.

During early postnatal life luxation or dislocation is rare but subluxation and presubluxation are relatively common. Subluxation must be judged to be common during early postnatal life not because dislocation is common during later life but because congenital subluxation with superimposed osteoarthritis or malum

Fig. 1.—Roentgen study of a woman aged 47. Observe the bilateral hip joint dysplasia with dislocation of the left hip and subluxation of the right hip. The patient's hips were never treated. She was totally disabled because of the painful superimposed osteoarthritis of the right hip joint, which had been considered normal until she strained her hip at the age of 46 years.

coxae senilis is a common cause of serious hip joint disability during adult life. Most untreated subluxated hips remain as subluxations; some continue to migrate from the inadequate socket and displace completely from the cartilaginous acetabulum as luxations or dislocations. No one knows how many of the subluxated hips return to normal by spontaneous recovery.

The earliest clinical observations are: the signs of the jerk or click (Ortolani[3]); signs due to postural shortening or contracture of the adductor muscles, tendons and fasciae, and femoral head displacement from the acetabulum.

Sign of the Jerk or Click (Ortolani).—This most valuable clinical observation was described first (1935) by Ortolani,[3] a pediatrician of Ferrara, Italy, and a disciple of the master Putti. It may be demonstrated the day of birth. It may be present before roentgen features are definite and certain. The sign is positive and pathognomonic evidence of hip joint dysplasia with

Fig. 2.—*A*, Newborn infant with clinical and roentgen evidence of dislocation of the right hip and subluxation of the left hip. Immediately after the sign of the "jerk of entry," the thighs reached normal symmetric abduction. *B*, Concentric reduction of both hips was maintained by a Frejka abduction pillow splint. The dysplastic hip joint rapidly returned to normal.

actual displacement of the femoral head from the insufficient acetabulum or a tendency to luxation.

(*a*) Jerk of Entry: Ortolani's sign of "the jerk of entry" may be demonstrated by the following maneuver:

The hips are flexed 90 degrees and the thighs are adducted slightly on the horizontal pelvis. The hips are gradually abducted by pressure of the physician's thumbs over the medial aspect of both knees while gentle pressure is also applied by the thumbs in line with the femoral shafts to obtain maximum displacement of the femoral head. Upward and medial pressure is applied by the fingers over and under the greater trochanters as the knees are spread apart and the hips are abducted and externally rotated (figs. 2 and 4).

The displaced femoral head enters the acetabulum concentrically following a sudden audible, palpable and visible jerk, click or snap. The sign is produced when the fovea capitis suddenly meets and rides over the acetabular ridge.

Immediately after the sign of the "jerk of entry" the thighs, if limited in abduction, will reach the highest degree of physiologic symmetric abduction (figs. 2*B* and 4*B*). Actual shortening or contracture of the adductor muscles and tendons will not permit complete abduction following the jerk of entry. However, com-

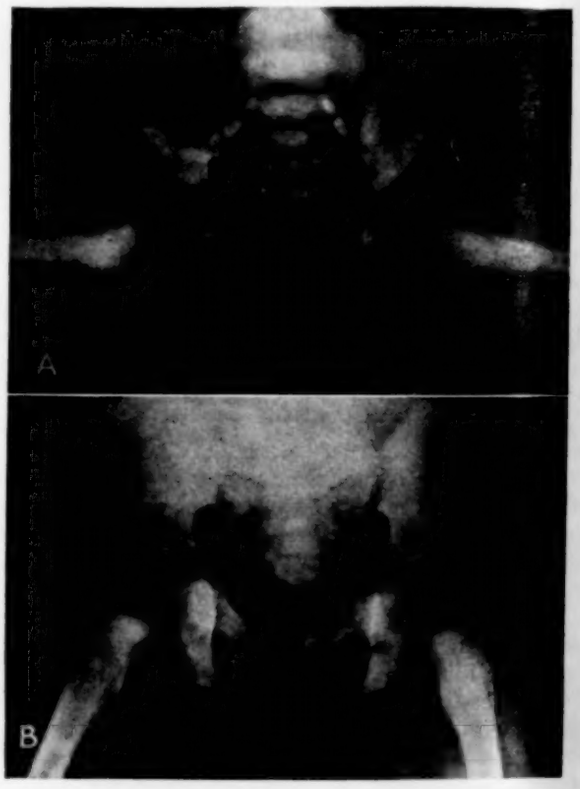

Fig. 3.—*A*, Roentgen study of a newborn infant after performance of Ortolani's maneuver and reduction of a dislocated left hip. The reduction was maintained by a Frejka abduction pillow splint. Observe the delayed ossification of the cartilaginous roof of both acetabulums. *B*, Roentgen study of infant at the age of 4 months demonstrated normal hip joints. Clinically the hip joints were stable and the extremities normal. Use of the splint was discontinued.

plete and full abduction rapidly results after several days in the abduction Frejka pillow splint.

The sign of the jerk indicates complete and concentric reduction of the femoral head within the dysplastic acetabulum. Reduction is maintained by the proper application of a Frejka abduction pillow splint (fig. 5). Reduction by Ortolani's maneuver without anesthesia may be accomplished in most cases during the first 6 months of life or before the function of weight bearing begins. Some infants require anesthesia, and in the older infants use of a rigid type of hip splint is indicated (fig. 6). Occasionally the sign cannot be demonstrated until adductor contracture is diminished

3. Ortolani, M.: La Lussazione Congenita dell'Anca: Nuovi criteri diagnostici e profilattici-correttivi, Bologna, Cappelli Editore, 1948.

by a brief period of treatment in the Frejka abduction pillow splint.

(*b*) Jerk of Exit: The sign of the "jerk of exit" may be demonstrated by reversing the maneuver.

Postural Shortening or Contracture.—Postural shortening or contracture of the adductor muscles, tendons and fasciae cause the following clinical signs: (*a*) Inspection with the infant suspended by the nurse or mother reveals:

1. Adduction and slight flexion attitude of the extremity.
2. Apparent shortening of the extremity.
3. Rotational attitude of the extremity.
4. Asymmetry of the labia.
5. Asymmetry of the inguinal folds and creases.
6. Deeper and more cephalad inguinal crease.
7. Asymmetry of the gluteal folds and creases.
8. Deeper and more cephalad gluteal crease.
9. Extra and deeper adductor skin folds and creases.
10. More cephalad knee, popliteal and ankle creases.
11. Obliquity of the pelvis.
12. Prominence of the lateral aspect of the hip region secondary to the shortening of the adductor muscles, tendons and fasciae and the pelvic tilt.
13. Absence of pain, inflammation and muscle spasm.

(*b*) Manipulation discloses limited passive abduction of the flexed hip (figs. 3 *A* and 4 *A*). In a normal relaxed infant the flexed hips may be passively abducted

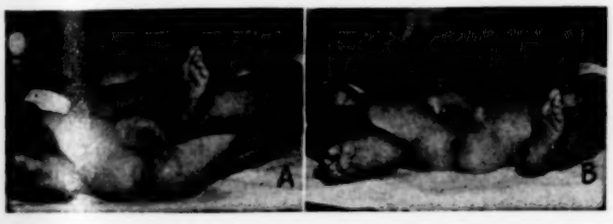

Fig. 4.—*A*, Infant 5 months of age with clinical and roentgen evidence of dislocation of the left hip. Observe that passive abduction of the flexed hips is normal on the right and considerably limited on the left. Without pain or distress to the infant, the physician is performing Ortolani's maneuver. *B*, Suddenly, and with an audible, visible and tactile jerk, the left femoral head reduced concentrically within the soft and pliable cartilaginous socket. Immediately after the "jerk of entry" passive abduction of the left hip returned to normal and the thighs reached the normal degree of physiologic symmetric abduction. The reduction was successfully maintained by a Frejka abduction pillow splint.

about 80 degrees. The knees will almost touch the examining table (fig. 7).

Limitation of abduction secondary to postural shortening or contracture of the adductor muscles, tendons and fasciae of the thigh is an almost constant clinical observation after neonatal life in congenital dysplasia of the hip joint with luxation, subluxation and presubluxation. Limitation of hip abduction is not a specific or pathognomonic sign of hip joint dysplasia, but it is a valuable adjunct to the diagnosis. Hip abduction may be limited by many pathologic conditions; it may be caused by voluntary resistance of the crying infant. During the examination the infant must be relaxed. A bottle of milk, colorful objects and musical sounds often help to relax or distract the child (figs. 2 *A* and 4 *A*).

Adductor shortening or contracture may be absent at birth or during the several weeks of neonatal life when muscles, tendons and joints are physiologically relaxed. This is explained by the hormonal influence of mother and infant. The relaxation mitigates the mechanical difficulties of the process of birth. The hormonal influence gradually diminishes after birth but persists during the first month or two of postnatal life. Adductor contracture and the many clinical signs secondary to the contracture usually are prominent about the third month of life.

Various authors have described "inversion of the extremity" and "eversion of the extremity" as characteristic attitudes of subluxation and luxation of the dysplastic hip joint. I have observed carefully the

Fig. 5.

Fig. 6.

Fig. 5.—Front view of Frejka abduction pillow splint. The splint is made in three different sizes, measuring 6, 9 and 12 inches (15, 23 and 30 cm.) from knee to knee, or the width of the envelope portion which encloses the pillow. The 6 inch splint is used during the first three months of life, the 9 inch splint during the second three months and the 12 inch splint during the third three months. Generally, two splints are required during several months of treatment.

Fig. 6.—Short bilateral plaster-plastic hip spica to maintain reduction of dislocation of the hip joint in older infants. The splint is rigid but functional. The infant is never permitted in a chair or on a davenport because supracondylar fracture of the femur could result from a fall. The infant's bed is arranged to prevent falls.

rotational attitudes of the extremities of infants with positive evidence of congenital dysplasia of the hip joint with femoral head subluxation, and I do not believe that there is any one attitude which can be named as characteristic. Most of the affected extremities presented either a neutral or a slightly inverted attitude.

A not uncommon experience was to have an infant referred by another physician or brought to the office directly by the parents because one extremity apparently favored a position of eversion with extreme external rotation of the foot. Clinical and roentgen studies often revealed positive evidence of hip joint dysplasia with femoral head subluxation of the "normal" or unsuspected extremity, which presented a neutral

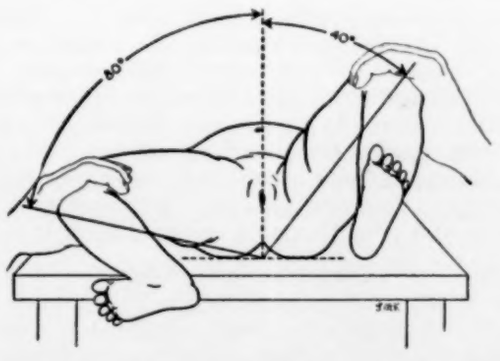

Fig. 7.—Passive abduction of the flexed hips of a relaxed infant normally is about 80 degrees. Limitation of passive abduction secondary to postural shortening or contracture of the adductor muscles, tendons and fasciae is an almost constant clinical observation after neonatal life in hip joint dysplasia with luxation, subluxation and presubluxation.

or slightly inverted rotational attitude. The normal extremity with external rotation changed to internal rotation immediately after stimulation; or during a playful period the extremity changed frequently from

one attitude to the other. The affected extremity, however, maintained the neutral or slightly inverted attitude after stimulation or during a playful period. A difference in rotational attitudes of the extremities of an infant frequently is the chief complaint of the parents or their physician.

Femoral Head Displacement from the Acetabulum.—When there is (*a*) no displacement of the femoral head from the acetabulum there is presubluxation; (*b*) partial displacement, subluxation, and (*c*) complete displacement, luxation.

The degree of femoral head displacement from the acetabulum may be measured clinically by manual examination of the hip joints and by measurements of the flexed hips from the horizontal pelvis to the knees.

A "feeling of telescoping" may be demonstrated with subluxation and presubluxation. This is secondary to the plasticity or pliability of the cartilaginous and capsular structures. True telescoping of the flexed hip often can be demonstrated with luxation or dislocation.

Fig. 8.—Roentgen study of pelvis and hip joints of infant 8 months of age with dysplasia of the left hip joint (before treatment). Observe: (1) the normal right hip joint; (2) delayed ossification of the left innominate bone with (*a*) inadequate sloping bony acetabular roof; (*b*) delayed closure or ossification of the cartilaginous ischiopubic juncture, and (*c*) delayed ossification of the ilium (which could be apparent only from the position of the pelvis when the roentgenogram was made); (3) inhibited ossification and osteogenesis of the left spherical cartilaginous femoral head; (4) break of Shenton's line on the left side, and (5) tilt of the pelvis.

Abnormal antetorsion of the femoral head, neck and proximal shaft, if present, may be demonstrated by manual examination. Abnormal antetorsion is not a common clinical observation because luxation is exceedingly uncommon. When luxation is present the femoral head is unusually prominent by palpation or even by inspection in Scarpa's triangle with the hip in extension. Pathologic antetorsion usually is not present with subluxation and presubluxation of the dysplastic hip.

ROENTGEN OBSERVATIONS

All roentgen dysplastic features are evidence of inhibited, delayed and altered endochondral ossification or osteogenesis of the innominate bone and femur with or without displacement of the femoral head from the acetabulum (fig. 3). Also, tilting of the pelvis and adduction attitude of the affected extremity secondary to adductor muscle shortening are almost constant observations (fig. 8). Delayed ossification of the cartilaginous roof of the acetabulum causes the bony acetabulum to appear flat and inadequate. Delayed ossification of the ilium and delayed ossification or closure of the ischiopubic cartilaginous juncture are obvious roentgen features. Inhibited and altered calcification or osteogenesis of the cartilaginous femoral head is a constant roentgen observation.

The degree of dysplasia often is different in the various anatomic elements of the hip joint. Acetabular dysplasia may persist while femoral head dysplasia improves, or femoral head dysplasia may increase during the period of recovery of the acetabular dysplasia. Pelvic obliquity and adduction of the extremity are almost constant roentgen observations secondary to the postural shortening or contracture of the adductor muscles, tendons and fasciae (fig. 8).

TREATMENT

Treatment of congenital subluxation and presubluxation of the dysplastic hip during infancy before the function of weight bearing begins is the secret for improving results of treatment of congenital dislocation and subluxation of the hip. Treatment at this early age prevents dislocation and other serious secondary changes of all his joint structures. The early Frejka abduction pillow splint treatment eliminates hospitalization, traction, anesthesia, manipulation, trauma, plaster immobilization or passive abduction frames. The splint provides active and functional immobilization (fig. 5). Professor Frejka, of Brno, Czechoslovakia, described this splint at the annual meeting of the American Academy of Orthopaedic Surgeons in Chicago, January 1947. The main feature of the splint is a pillow which is placed in an envelope-like portion of the splint. This pillow section fits firmly between the flexed thighs from knee to knee. The pillow pressure gradually overcomes the adductor contracture, abducts the hips completely and levers the femoral head to its natural position within the dysplastic socket. Concentric reduction is essential. Concentric reduction is obtained by abduction of the flexed hips and not by abduction of the extended hips. The adductor shortening and the limitation of passive abduction in presubluxation and subluxation usually are corrected three or four days or weeks after the splint is applied. With presubluxation and subluxation, manipulation of the hip or stretching of the adductor shortening is not necessary by either physician or mother. With dislocation the femoral head is reduced by Ortolani's maneuver (figs. 3 and 4). The reduction is maintained by the Frejka splint in the younger infants (fig. 5) and by a rigid short spica in the older infants (fig. 6).

The Frejka splint is made of twill or mattress ticking. The pillow is filled with kapok or feathers. A waterproof material is placed between the splint and the diaper. The mother is instructed in the application of the splint and care of the infant. When the mother is bathing the infant the thigh is maintained in the position of abduction by placing a folded diaper around the thigh and pinning it to the cover of the bathing table. Arrangements are made for the mother to visit with another mother who has had experience with the Frejka splint treatment. A jumper is purchased for the younger infants and a home-made walker is used for the older infants. They favor the development of normal stimuli of motions and pressures. Clinical examinations and roentgen studies are made at the office monthly. The splint is altered as the infant grows, so that the pillow section extends from knee to knee. Standing and walking are not delayed. The splint treatment is continued until roentgen study demonstrates an adequate bony acetabular roof and clinical examination reveals a stable hip joint. Treatment usually continues over a period of three to six

months; however, some infants require less and others more time in the splint. The mother is instructed to continue with exercises which strengthen the abductor muscles. The hip joint usually returns to normal because of several factors: (1) spontaneous healing; (2) conditions favoring biomechanical laws of bone growth provided by the splint, and (3) early treatment before the addition of serious secondary obstacles or sequelae (fig. 3).

Complete displacement of the femoral head from the socket, or dislocation, should not be treated by the Frejka pillow splint following reduction by Ortolani's "sign of the jerk of entry," except in cases which are recognized during the first several days or months of life. Generally, dislocation in the older infant is treated by gentle manipulative reduction using Ortolani's maneuver with the infant under anesthesia. The reduction is maintained by the application of a short, rigid but functional, bilateral plaster-plastic spica (fig. 6).

Spontaneous healing of the dysplastic hip joint does occur. If all dysplastic hips possessed the full capacity for spontaneous recovery, then congenital dislocation and congenital subluxation of the hip would never become a serious problem. No one knows, and there is no method for determining, the potential capacity of the structures of the dysplastic hip to return, partially or completely, to normal. The growth capabilities or maturation of the tissues of the dysplastic hip may be temporarily or permanently inhibited or delayed by secondary external environmental factors with varying degrees and forms of malformation. If it is true that congenital dysplasia of the hip is always bilateral during embryonic or early fetal life, and I believe that it is, then unilateral postnatal dysplasia of the hip, with or without displacement of the femoral head, must denote spontaneous healing of the opposite apparently normal hip joint. Whether the capability for recovery is feeble or abundant, it must be axiomatic that age is the most important factor influencing the results of treatment of congenital dysplasia of the hip. A favorable mechanical and functional position obtained by treatment of the dysplastic hip during infancy, before the function of weight bearing begins, not only enhances the potential growth powers of the maldeveloped hip joint and the laws of bone growth but also prevents the development of secondary and serious pathologic sequelae and abnormal reciprocal articular relations. The conditions prevented by early treatment include subluxation, dislocation, osteochondrosis, coxa plana, aseptic necrosis, osteoarthritis, adhesions, contractures, growth malformations and much suffering. In the language of Putti, *"La cura preambulatoria non e piu una vuota aspirazione"* (The preambulatory cure is no longer an empty hope).

CONCLUSION

If general practitioners, pediatricians, roentgenologists and orthopedic surgeons work together, then the knowledge of congenital dysplasia of the hip joint gradually will increase and the dysplastic sequelae gradually will diminish.

321 Medical Arts Building.

Safeguarding the Profession.—Every physician should aid in safeguarding the profession against admission to it of those who are deficient in moral character or education.

From the PRINCIPLES OF MEDICAL ETHICS of the American Medical Association.

TERRAMYCIN IN THE TREATMENT OF PNEUMOCOCCIC AND PRIMARY ATYPICAL PNEUMONIA

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Terramycin is an antibiotic derived from Streptomyces rimosus, a new species of actinomycete isolated from a soil sample by Finlay and his associates.[1] It is amphoteric and forms a hydrochloride and a sodium salt. Preliminary studies by Finlay and his colleagues showed that terramycin had a low degree of toxicity in animals and that the crystalline hydrochloride salt possessed a wide range of antibacterial activity against both gram-positive and gram-negative organisms in vitro, as well as having a significant effect on experimental infections with Rickettsiae and certain viruses. Administration to human subjects indicated that the antibiotic was well tolerated when given by mouth and that it was absorbed from the gastrointestinal tract in sufficient amounts to give effective therapeutic concentrations in the blood and urine. The present report deals with the use of terramycin in the treatment of patients with pneumococcic lobar pneumonia and with primary atypical (virus) pneumonia. The results indicate that terramycin is remarkably effective in the treatment of both types of infection.

SELECTION OF CASES AND METHODS OF STUDY

All the patients were studied on the wards of the Columbia-Presbyterian Medical Center. The following criteria were met in all cases:

1. The history, physical examination and laboratory observations were consistent with a diagnosis of either pneumococcic lobar pneumonia or primary atypical pneumonia.

2. Roentgenograms of the chest revealed distinct pneumonic infiltrations.

3. With the exception of only 2 persons (case 1 and 4) none of the patients had received any form of antibiotic therapy prior to hospitalization.

Bacteriologic Methods.—Cultures of material from the nose and throat, sputum and blood were done in all cases. When pneumococci were recovered, the strains were identified with the usual serologic procedures. Serial tests for the presence of cold agglutinins were done in all the cases of primary atypical pneumonia and in a number of the cases of bacterial pneumonia.

Dosage and Route of Administration.—Terramycin was administered orally in the form of its crystalline hydrochloride salt in 0.250 Gm. tablets or capsules. The initial dose was 2.0 Gm.; this was followed by 1.0 Gm. every six hours. In some persons it was necessary to reduce the daily amount of administered drug because of untoward gastrointestinal side effects. No effort was made in this study to determine the minimum amount of terramycin necessary for a satisfactory therapeutic result.

From the Department of Medicine, College of Physicians and Surgeons, Columbia University, and the Presbyterian Hospital, New York.

The terramycin used in this study was furnished by Dr. Gladys L. Hobby of Chas. Pfizer & Co., Inc.

1. Finlay, A. C., and others: Terramycin, a New Antibiotic, Science **111**: 85 (Jan. 27) 1950.

RESULTS

Lobar Pneumonia.—Eighteen patients with pneumococcic lobar pneumonia were treated with terramycin. All presented the characteristic features of lobar pneumonia; from each a typed pneumococcus was recovered. In none of these persons was a pneumococcus obtained from the blood. There were no complications attributable to the pneumococcic infections, and all patients made a rapid and complete clinical recovery.

With the exception of one subject (C. B., table 1) there was a dramatic fall in the temperature within twenty-four to thirty-six hours after the first dose of terramycin was given. The major decline in fever occurred during the first twenty-four hours after institution of therapy. A composite picture of the febrile response is shown in figure 1.

Improvement in the acute symptoms caused by the pneumonia usually coincided with the fall in temperature. In many instances, however, symptomatic improvement actually preceded the fall in temperature. The physical signs of pulmonary consolidation rapidly reverted to normal, these changes occurring within the time interval seen with penicillin therapy. Roentgenograms of the chest showed either partial or complete clearing of the pneumonic infiltrates prior to hospital discharge. Follow-up examinations failed to disclose any persons with unresolved pneumonia. There were no patients with features suggestive of a relapse either during or after cessation of therapy. One patient had an unexplained rise in temperature to 102 F. on the fifth day of treatment. This was not associated with any change in symptoms, physical signs or white blood count.

Table 1.—*Data from 18 Cases of Pneumococcic Lobar Pneumonia*

Patient	Age	Sex	Race	Day of Illness	Location of Pneumonia*	Type Pneumococcus	Result of Therapy	Duration of Therapy (Days)	Terramycin (Total Gm.)	Gastrointestinal Symptoms†
R. P.	59	F	W	1	LLL, LUL	1	Excellent	4	16	None
A. A.	30	M	N	1	RUL	8	Excellent	4	17	None
R. T.	15	M	N	1	RUL	1	Excellent	5	19	V
W. U.	24	M	W	1	RUL	3	Excellent	5	18	None
E. M.	28	M	W	3	RLL	1	Excellent	5	19	None
B. D.	75	M	W	2	RUL	1	Excellent	7	27	None
P. McN.	42	M	W	3	LLL	8	Excellent	6	22	None
R. M.	22	M	W	1	LLL	3	Excellent	5	19	V
M. J.	54	F	N	3	RLL	21	Excellent	5	21	N, D
J. G.	54	M	N	5	LUL	20	Excellent	6	26	None
J. P.	16	M	W	2	LLL	3	Excellent	4	17	None
D. D.	13	F	N	1	LLL	3	Excellent	5	19	N, V, D
A. S.	24	F	N	2	RUL	19	Excellent	5	19	None
J. L.	66	F	N	1	RLL	8	Excellent	5	20	None
F. P.	63	F	N	2	RUL	3	Excellent	6	22	N, V
C. E.	23	F	W	5	LLL	7	Excellent	6	17	None
C. B.	55	F	N	5	RLL	11	Slow fall in temperature	8	30	None
M. W.	56	F	N	3	RLL	30	Excellent	4	6.5	None

* LLL = lower lobe of left lung, LUL = upper lobe of left lung, RUL = upper lobe of right lung and RLL = lower lobe of right lung.
† N = nausea, V = vomiting and D = diarrhea.

Table 2.—*Data from 7 Cases of Primary Atypical Pneumonia*

Patient	Age	Sex	Race	Day of Illness	Location of Pneumonia*	Cold Agglutinin Titer	Result of Therapy	Duration of Therapy (Days)	Terramycin (Total Gm.)	Gastrointestinal Symptoms†
B. C.	16	F	W	4	RUL	1:1,024	Excellent	6	25	None
J. B.	39	M	W	7	LLL, RUL	1:128	Good	6	24	None
M. W.	25	F	W	3	LLL, LUL	1:16	Excellent	7	18	D
L. B.	44	M	N	6	LLL	1:256	Excellent	7	26	D, N
L. F.	53	F	W	4	LUL	1:16	Excellent	7	17	V, D
W. P.	43	M	N	6	LLL	1:128	Excellent	6	24	None
J. McD.	24	M	W	4	LLL	1:16	Excellent	6	20	N

* RUL = upper lobe of right lung, LLL = lower lobe of left lung and LUL = upper lobe of left lung.
† N = nausea, V = vomiting and D = diarrhea.

Two representative cases are presented:

Case 1 (fig. 2).—R. M., a 22 year old white man, a leather worker, entered the hospital March 9, 1950. Nine days before admission an infection of the upper respiratory tract with coryza, chilly sensations and low grade fever, had developed. This illness had rapidly subsided, and the patient had been able to resume his work in three days. On the morning of hospitalization he was awakened by a shaking chill and a cough. Within four hours the cough had become productive of bloody sputum, and pleuritic pain had developed in the left lower part of the chest. Associated with these symptoms were prostration and nausea. On several occasions in the few hours prior to entry the patient vomited. About six hours before admission he was seen by a physician who gave him 1.0 Gm. of sulfadiazine; he vomited immediately after taking that medicament. Physical examination showed: temperature, 105 F.; pulse rate, 120; respiratory rate, 32, and blood pressure, 80 systolic and 30 diastolic. The patient was acutely ill, with cyanosis of lips and nail beds. The nasal and pharyngeal mucosa was congested. There were splinting of the left hemithorax, impaired percussion and moist inspiratory rales at the base of the left lung posteriorly. Laboratory tests showed 17,440 white blood cells, with 97 per cent neutrophils and 3 per cent lymphocytes. Type 3 pneumococci were found in the sputum on direct typing and culture. Cultures of the blood were sterile. A roentgenogram of the chest (fig. 3) showed consolidation in the lower lobe of the left lung.

One hour after admission the patient was given terramycin hydrochloride, 2.0 Gm., and about thirty minutes later he vomited 100 cc. of yellow material. Terramycin therapy was continued, 1.0 Gm. every six hours for five days, without further untoward gastrointestinal symptoms. Within twelve hours he was decidedly improved, with complete disappearance of the pleuritic pain and decrease in cough. By the fourth hospital day he was asymptomatic. A roentgenogram of the chest on the seventh day of illness (fig. 4 *A*) revealed partial clearing

of the left lower lung field. There were 14,600 white blood cells at this time. The patient was discharged on the ninth hospital day. Subsequent examinations (fig. 4 *B*) showed complete clearing of the pneumonic infiltration.

CASE 2. (fig. 5).—R. T., a 15 year old Negro boy, was admitted on Feb. 12, 1950 with a four day history of coryza

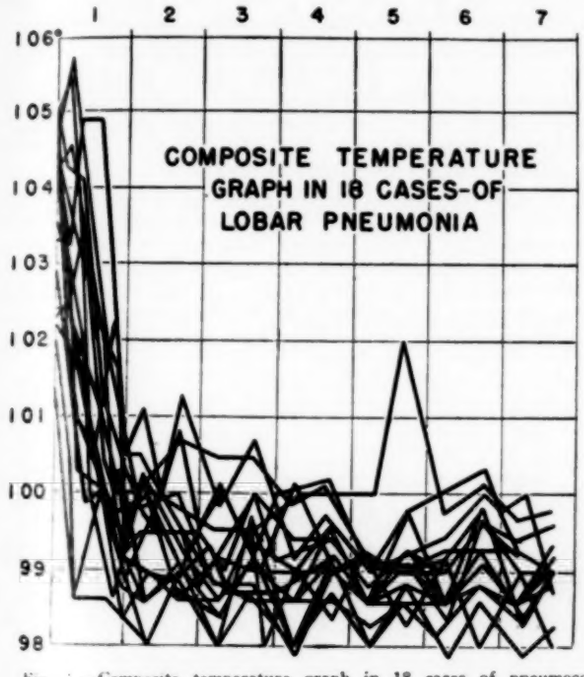

Fig. 1.—Composite temperature graph in 18 cases of pneumococcic lobar pneumonia, starting with the first day of terramycin therapy. The horizontal line of figures represents the day of treatment, the vertical line the temperature (Fahrenheit).

and cough. On the morning of entry he had awakened with severe pleuritic pain in the right anterior part of the chest; this had been followed by a shaking chill and increase in cough productive of rusty sputum. Shortly prior to admission he

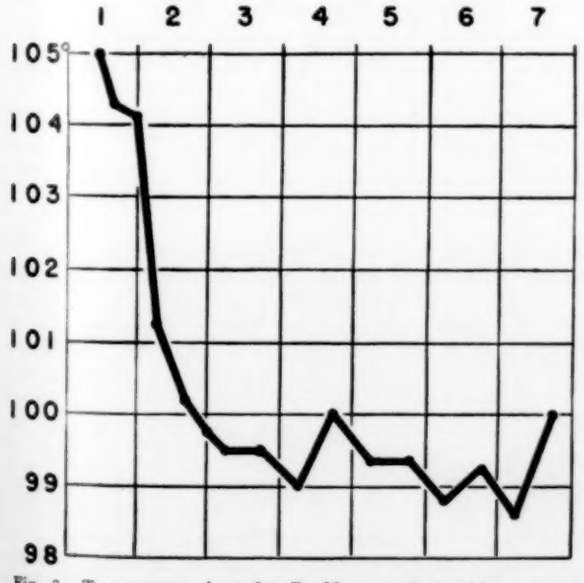

Fig. 2.—Temperature chart for R. M., a patient with pneumococcic lobar pneumonia, starting with the first day of terramycin therapy. The horizontal line of figures represents the day of the disease, the vertical line the temperature (Fahrenheit).

vomited once. The previous respiratory history was entirely noncontributory. Physical examination showed: temperature, 105 F.; pulse rate, 126; respiratory rate, 24, and blood pressure, 120 systolic and 60 diastolic. The boy was thin, shivering and acutely ill. The pharynx was congested. There were splinting of the right hemithorax, pleural friction rub, suppressed breath sounds and fine inspiratory rales over the apex of the right lung anteriorly. Laboratory tests showed 28,200 white blood cells, with 84 per cent neutrophils, 13 per cent lymphocytes and 3 per cent monocytes. Cultures of sputum and material from the nose revealed type 1 pneumococci. Cultures of the blood were sterile. Roentgenograms of the chest revealed consolidation of the upper lobe of the right lung.

One hour after admission 2.0 Gm. of terramycin hydrochloride was given orally. About thirty minutes later the patient vomited approximately 30 cc. of a yellowish material. The terramycin therapy was continued, 1.0 Gm. every six hours for five days, without further gastrointestinal side effects. Symptoms, with the exception of residual cough, had entirely disappeared and temperature was normal within twenty-eight hours after institution of therapy. On the third day there were 15,000 white blood cells and on the fifth day 9,400. On the seventh hospital day a roentgenogram of the chest revealed almost complete clearing; physical examination of the chest was normal, and the patient was discharged asymptomatic.

Pertinent data relating to the 18 cases of lobar pneumonia are shown in table 1.

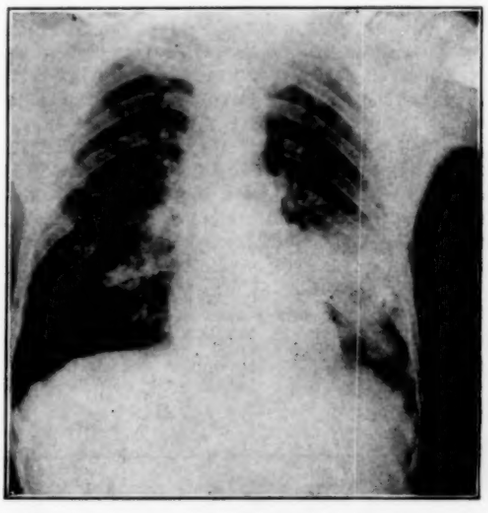

Fig. 3.—Roentgenogram of the chest of R. M., made on admission.

Primary Atypical Pneumonia.—Seven patients presented the typical features of primary atypical (virus) pneumonia; in 4 of these a significant rise in cold agglutinin titers occurred. The only pathogenic bacterium isolated from these patients was a type 33 pneumococcus in 1 case. Prompt fall in temperature occurred in every patient within thirty-six hours after the first dose of terramycin, and in no case was there a febrile relapse. A composite temperature graph is shown in figure 6.

Demonstrable clinical improvement was usually evident within a few hours after institution of therapy. The paroxysmal cough quickly disappeared, and in the majority of subjects all coughing was absent by the end of the fourth day. Malaise and headache had disappeared within forty-eight hours in all patients. Abnormal physical signs, when present, reverted to normal in the anticipated period that has been seen with aureomycin therapy.

As in the group with lobar pneumonia, roentgenograms of the chest in this group showed partial to complete clearing prior to hospital discharge. However, in 2 patients there was a definite increase in pneumonic infiltrations during the first twenty-four hours of therapy, even though the temperature was falling and there was symptomatic improvement.

Two illustrative cases are reported in detail, and the pertinent data from the entire group are presented in table 2.

CASE 3 (fig. 7).—B. C., a 16 year old schoolgirl whose previous health had been excellent, was admitted on March 13, 1950. Four days before admission a mild sore throat and a nonproductive cough had developed. On the following day the cough had become much worse, and she had had several drenching sweats. During the night preceding hospitalization she had noted chilly sensations and a severe frontal headache. Her mother stated that the patient had appeared disoriented throughout part of the twenty-four hour period prior to admission. Physical examination showed: temperature, 103 F.; pulse rate, 90; respiratory rate, 22, and blood pressure, 120 systolic and 80 diastolic. The pharynx was congested. Suppressed breath sounds and increased tactile fremitus were present over the upper third of the right lung posteriorly; there were no rales. Laboratory tests showed: 6,320 white blood cells, with 79 per cent neutrophils, 10 per cent lymphocytes, 7 per cent monocytes, 3 per cent eosinophils and 1 per cent basophils. Cultures of sputum, blood and material from the nose and throat were negative. The cold agglutinin titer was 1:16. A roentgenogram of the chest (fig. 8 *A*) revealed infiltration in the upper lobe of the right lung.

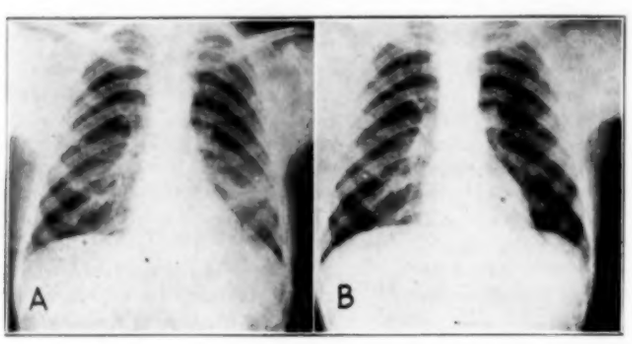

Fig. 4.—Roentgenograms of the chest of R. M. (*A*) on the sixth day of illness and (*B*) three weeks after the onset of illness.

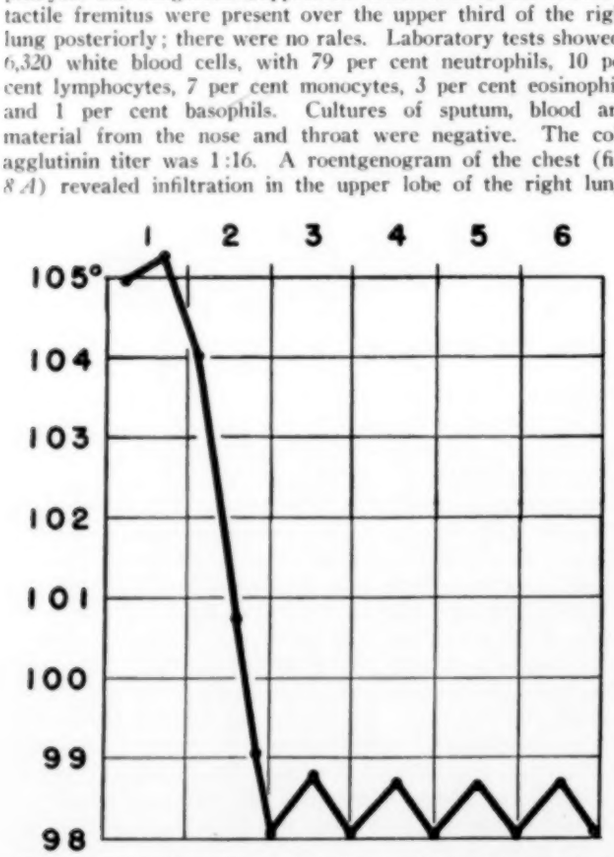

Fig. 5.—Temperature chart for R. T., a patient with pneumococcic lobar pneumonia, starting with the first day of terramycin therapy. The horizontal line of figures represents the day of the disease, the vertical line the temperature (Fahrenheit).

Terramycin hydrochloride, 2.0 Gm., was given four hours after admission, followed by 1.0 Gm. every six hours for six days. Symptomatic improvement, with decrease in cough and malaise and disappearance of headache, was evident within twenty-four hours after institution of therapy. On the second hospital day many fine inspiratory rales were present over the apex of the right lung posteriorly. However, all abnormal physical signs in the chest had disappeared by the end of the first hospital week. On the tenth day of illness a roentgenogram of the chest (fig. 8 *B*) revealed almost complete clearing of the right upper lung field; there were 10,100 white blood cells, and the cold agglutinin titer had risen to 1:1,024. The patient was discharged on the tenth hospital day, entirely asymptomatic.

CASE 4 (fig. 9).—J. B., a 39 year old postal worker, was admitted on Feb. 13, 1950. Six days before admission chilly sensations and malaise had developed. On the following day he had begun to have a paroxysmal cough productive of small amounts of brown sputum. Two days later he had had a shaking chill, and the cough had become much worse. At that time he was seen by a physician, who found his temperature to be 101.6 F. and gave him an injection of penicillin. However all symptoms persisted, and his temperature had risen to 103.6 F. by the next morning. He was given another injection of penicillin. Despite treatment his cough and fever persisted, and on the sixth day of illness he entered the hospital. Moderately severe generalized headache had been present in the few days prior to entry. His previous health had been excellent. Physical examination showed: temperature, 101.8 F.; pulse rate, 88; respiratory rate, 24, and blood pressure, 122 systolic and 76 diastolic. The pharynx was congested. Scattered, coarse, inspiratory rales were heard over the left midlung field posteriorly. Culture of the sputum was negative. Laboratory tests showed 9,000 white blood cells, and the cold agglutinin titer was 1:32.

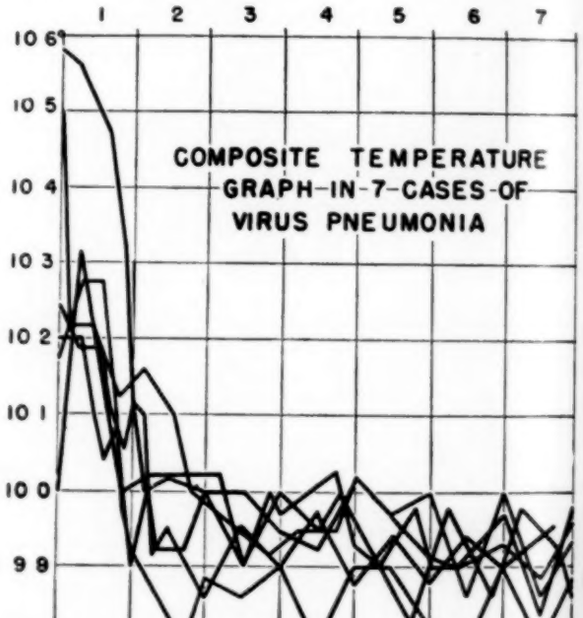

Fig. 6.—Composite temperature graph in 7 cases of primary atypical (virus) pneumonia, starting with the first day of terramycin therapy. The horizontal line of figures represents the day of treatment, the vertical line the temperature (Fahrenheit).

Throughout the first hospital day the patient received no therapy. His temperature rose to 103.4 F. on the evening of admission, and the cough, as well as other symptoms, persisted. On the morning of the second hospital day he was given 2.0 Gm. of terramycin hydrochloride, followed by 1.0 Gm. every six hours for six days, without symptoms of gastrointestinal irritation. Within thirty-six hours after institution of therapy his temperature had fallen to normal and he was decidedly improved. On the fourth day of treatment there were 13,100 white blood cells. A roentgenogram of the chest on the sixth day of treatment showed almost complete clearing, and a repeat examination four days later revealed no residual infiltration. By the seventh hospital day the cold agglutinin titer had risen to 1:128; there were 12,800 white blood cells, and the patient was completely asymptomatic.

TOXICITY

No serious toxic effects attributable to the terramycin therapy were noted. However, symptoms indicative of gastrointestinal irritation appeared in 9 of the 25 patients. Vomiting occurred within the first hour after institution of therapy in 2 patients; each had had nausea

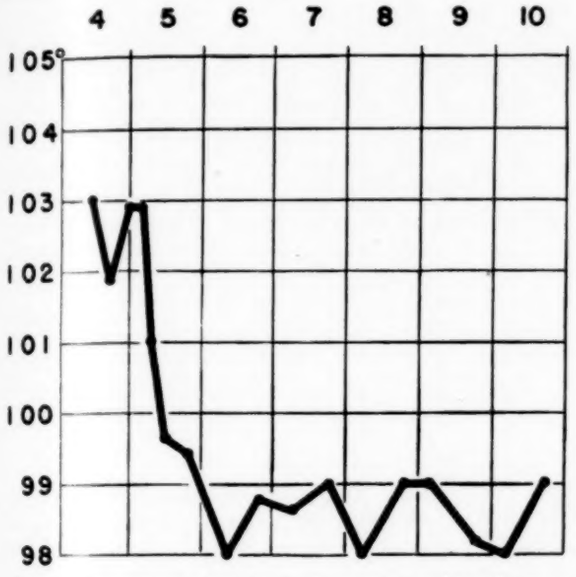

Fig. 7.—Temperature chart for B. C., a patient with primary atypical pneumonia, starting with the first day of terramycin therapy. The horizontal line of figures represents the day of the disease, the vertical line the temperature (Fahrenheit).

and had vomited several times prior to taking the medication. Both were able to continue taking full doses of the drug without further difficulty. One patient experienced severe nausea about one hour after each dose of terramycin; this disappeared when the amount was changed from 1.0 to 0.5 Gm. every six hours. In 3 patients there was transient diarrhea, with from three to six soft or watery bowel movements per day; the diarrhea subsided spontaneously even though terramycin therapy was continued. Two persons had transient nausea and vomiting on the second and third days of treatment; both continued taking the same amount of terramycin. One patient had a severe gastrointestinal disturbance, with nausea, vomiting and diarrhea, throughout the entire course of therapy; the amount of administered drug was decreased without change in

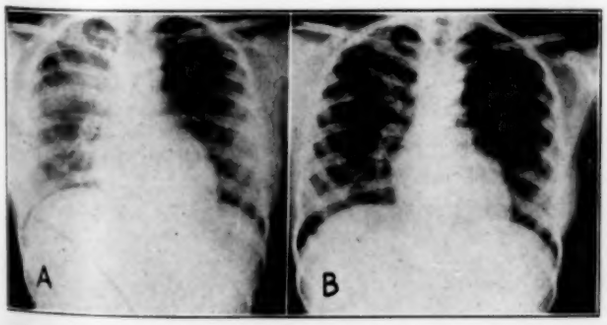

Fig. 8.—Roentgenograms of the chest of B. C. (*A*) on admission and (*B*) on the fourteenth day of illness.

the symptoms. Epigastric fulness and distress immediately after taking terramycin tended to be a not infrequent complaint, although it was usually transitory and did not seem correlated with the other gastrointestinal side effects. Bowel movements in almost all patients were softer and bulkier than normal. In no case was it necessary to discontinue therapy because of the symptoms described.

Complete examinations were not performed in all cases; however, in a limited number there were no detectable abnormalities in the hepatic, renal or hematopoietic systems which could be attributed to the terramycin therapy. No clinically evident fungus infections appeared during treatment or in the post-treatment period. There were no instances of skin rash or glossitis.

COMMENT

On the basis of the clinical data presented it is suggested that terramycin is a highy effective antibiotic in the treatment of pneumococcic pneumonia. The majority of patients in this series were seriously ill; however, there was none who had a serious complicating disease, and there were no instances of bacteremia. In view of the small number of subjects studied in this series, an attempt at a definitive comparison of terramycin with the other antibiotics in use today seems unjustified. However, the fall in temperature and the symptomatic improvement occurred in patients treated with terra-

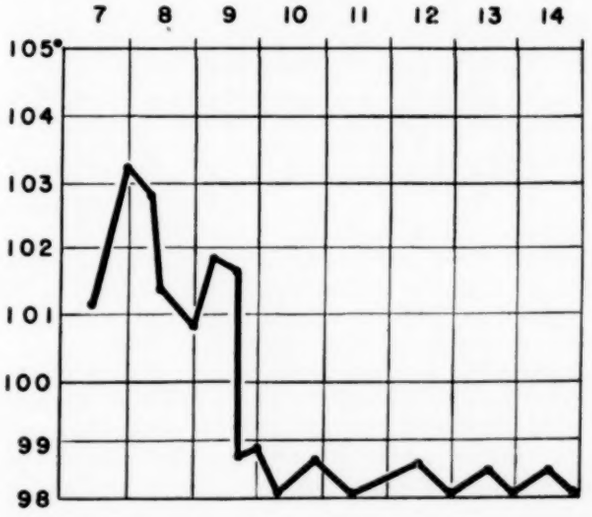

Fig. 9.—Temperature chart for J. B., a patient with primary atypical pneumonia, starting the day before the first day of terramycin therapy. The horizontal line of figures represents the day of the disease, the vertical line the temperature (Fahrenheit).

mycin in about the same time as has been demonstrated with penicillin, and the clinical response seems equal to that described by Gocke and his co-workers [2] in pneumococcic lobar pneumonia treated with orally and parenterally administered aureomycin.

In spite of the difficulty that exists in the appraisal of the use of a therapeutic agent in a disease as variable as primary atypical (virus) pneumonia, it seems that terramycin exerts a favorable influence on the disease. The rapid disappearance of symptoms after treatment was unequivocal in the 7 patients in this group. Results compare favorably with those obtained by Kneeland and associates,[3] Schoenbach and Bryer [4] and Finland and his co-workers [5] with aureomycin in the treatment of atypical pneumonia.

2. Gocke, T. M.; Collins, H. S., and Finland, M.: Aureomycin Treatment of Pneumococcic Pneumonia, Arch. Int. Med. **84:** 857 (Dec.) 1949.

3. Kneeland, Y., Jr.; Rose, H. M., and Gibson, C. D.: Aureomycin in the Treatment of Primary Atypical Pneumonia, Am. J. Med. **6:** 41 (Jan.) 1949.

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5. Finland, M.; Collins, H. S., and Wells, E. B.: Aureomycin in the Treatment of Primary Atypical Pneumonia, New England J. Med. **240:** 241 (Feb. 17) 1949.

CONCLUSIONS

1. Terramycin proved to be an effective agent in the treatment of 18 patients with lobar pneumonia due to a typed pneumococcus and 7 patients with primary atypical (virus) pneumonia.

2. The response to terramycin therapy was considered excellent in every case, and there were no cases in which the treatment failed.

3. The only untoward side effects attributable to the terramycin therapy were symptoms of gastrointestinal irritation. These resembled the symptoms seen after the administration of aureomycin, but seemed less severe.

ABRASIVE BALLOON FOR EXFOLIATION OF GASTRIC CANCER CELLS

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The application of the cytologic method as an adjunct to the diagnosis of gastric malignancy has been handicapped by the fact that diagnostic material is often scanty and poorly preserved. Tomenius [1] reported an elaborate procedure for securing better preservation of gastric cells. Papanicolaou and Cooper,[2] Hollander, Hess and Sober,[3] Ulfelder, Graham and Meigs,[4] Richardson, Queen and Bishop [5] and Botsford and Tucker [6] reported various technics for improving the collection of gastric aspirates for diagnosis of cancer. Nevertheless, all reports showed that the clinical application was limited by frequently missed diagnoses.

A review of the experience of this laboratory by Seybolt, Papanicolaou and Cooper [7] revealed that about one third of the cases of gastric cancer were diagnosed by the routine aspirated specimens and that these results could be improved by means of careful gastric lavage.

It was thought that mechanical irritation of the gastric mucosa might produce better diagnostic material. For this purpose an inflatable abrasive balloon has been devised and tested.

APPARATUS

The apparatus consists of a standard 16 French double lumen tube 100 cm. in length with markings at 45, 60 and 75 cm. (figs. 1 and 2). One lumen, designated the aspirator, is connected proximally to a syringe and distally to a patent silver-plated bucket. The other lumen, designated the agitator, is connected proximally to an inflating bulb and distally to an inflatable balloon.

The balloon is made of a condom opened at both ends. To the external surface are tied by single slipped bowknots approximately two hundred and fifty pieces of untreated braided silk, arranged in a regular pattern about 3 mm. apart and cut to leave ends about 2 mm. long. The ends of the balloon are fixed to the tube by silk ties about 8 cm. apart. When the balloon is uninflated it collapses on the sides of the tube; when it is inflated with 175 cc. of air it measures 10 by 5 cm.

CLINICAL SERIES

The abrasive balloon has been utilized in collecting cellular material from the stomachs of 70 patients with clinical evidence of gastric disease. Those with signs of active upper gastrointestinal bleeding, healing gastric perforations, esophageal varices or esophageal obstruction were not studied. More than 200 individual specimens were obtained from this group of patients and 1,000 slides prepared for study. This report is limited to the 33 patients in whom the diagnosis of a pathologic condition has been established by surgical operation.

PREPARATION OF PATIENT

Most cells found in the gastric aspirate undergo deterioration when exposed to the prolonged action of the digestive juices. Since the cells are autolyzed before aspiration, especially in the retentive stomach, immediate fixation of the specimen is of little avail except to hinder further disintegration. Moreover, the presence of disintegrated material in the specimen tends to displace the few available cells that may be had on the smear. Therefore it should be strongly emphasized that satisfactory specimens cannot be obtained by this method unless the stomach is empty, clean and free of the products of retention. Not only the patients with clinical gastric retention but also those with subclinical retention must be properly prepared. The abrasive effect of the balloon depends on contact between the mucosa and the silk brushes to get good cell groups. In order to insure the brush-mucosal contact, a liquid diet the day before the tests, and gastric aspiration the night before, are measures which help to clear away abnormal residue. This regimen was used in all patients preparatory to taking specimens with the balloon.

PROCEDURE

All dentures are removed from the mouth of the patient, which is cleansed by rinsing. The deflated balloon is dipped in Ringer's solution and passed orally with the aid of small sips of the same solution. Slight discomfort is experienced by the patient as the balloon traverses the posterior pharynx. Local anesthesia may be used to minimize the gag reflex. Once the balloon is past the epiglottis, it is advanced easily into the stomach as the patient swallows.

After the tube is beyond the 60 cm. mark, all gastric residue is aspirated and discarded. The balloon is then inflated by 75 to 100 cc. of air. Proper position is attained by withdrawing the tube until the inflated balloon, checked at the cardia, causes a vomiting reflex. The placement of the balloon well within the stomach is now standardized and fluoroscopic confirmation is unnecessary.

Fluoroscopic examination reveals that moderate inflation of the balloon distends the fasting stomach enough to excite motility. This reactive peristalsis, aided by gentle manipulation of the tubing, transfers the abrasive balloon from the cardia to the pyloris. The balloon is deflated at the pyloris so that it may enter the canal. Slow inflation of the balloon in the pyloric canal causes the balloon to move back into the

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2. Papanicolaou, G. N., and Cooper, W. A.: The Cytology of the Gastric Fluid in the Diagnosis of Carcinoma of the Stomach, J. Nat. Cancer Inst. **7**: 357, 1947.
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7. Seybolt, J.; Papanicolaou, G. N., and Cooper, W. A.: Cytology in the Diagnosis of Gastric Cancer, to be published.

antrum, and it is then drawn back to the cardia. The procedure is repeated five or more times over the period of an hour so that the soft silk brushes come in contact with the entire gastric mucosa. Continual gentle suction on the aspirator prevents any accumulation of gastric juice from interfering with the brush-mucosal contact. It is best to have the patient expectorate all salivary and postnasal excretions.

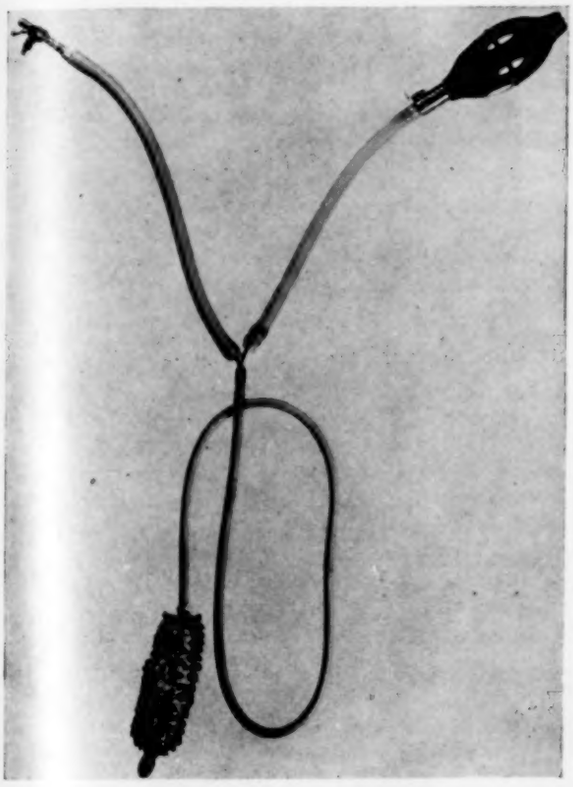

Fig. 1.—Photograph of the inflatable abrasive gastric balloon apparatus.

Gastroscopic and pathologic examination of stomachs failed to reveal any grossly perceptible traumatic defects following use of the balloon. Normal stomach tissue is quite resistant to such injury. Although occasional blood is observed in some aspirations taken from abnormal stomachs, the use of the balloon has not resulted in any hemorrhagic complications. On completion of the test, the balloon is deflated and withdrawn. It is immersed immediately in Ringer's solution and taken to the laboratory. Alcohol fixation is deferred at this time so that the cells will not be fixed to the silk.

In the laboratory any fragments of tissue seen on the silk brushes are removed by a cupped forceps and smeared directly onto slides prepared with a thin film of albumin. These slides are placed in ether-alcohol fixative. The entire balloon is then replaced in Ringer's solution and shaken until all the cells adherent to the silk are dislodged and dispersed throughout the medium.

After alcohol fixation the individual specimens are centrifuged for thirty minutes at 1,500 revolutions per minute. The surface fluid is decanted, the sediment covered with 95 per cent alcohol and the smears made. Four smears are made from each specimen, and routinely one slide is stained by the EA 65 modification [8] of the basic procedure described by Papanicolaou.[9] The other three slides are stained by methods still under study and as yet unpublished. After-care of the apparatus consists of thorough washing with soap and water, soaking in benzalkonium chloride solution 1 : 1,000 for thirty minutes and drying in a surgically clean towel.

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RESULTS

Thirty-three patients of the series examined have had their stomach lesions confirmed during the period of study. There were 17 malignant lesions, which included 14 cases of carcinoma, 2 of Hodgkin's disease and 1 of reticulum cell sarcoma. In this group, 14 gastric resections were performed and 3 biopsy specimens were taken because of inoperability. There were 15 benign lesions, which included 2 polyps, 10 gastric ulcers and 3 cases of gastritis. In 1 instance there was no gastric lesion. In this group of 16 benign cases, 13 gastric resections and 2 simple excisions of polyps were performed. One stomach was biopsied in the absence of any demonstrable lesion.

The smears made from the specimens obtained from these patients by four different methods were studied, and the cellular interpretations are compared in the accompanying table. The routine smear was made from aspirated material obtained after a twelve hour fast and placed immediately in 95 per cent alcohol. The mechanical irritation smear was made from aspirated material obtained during the first thirty minutes that the inflated balloon is irritating the gastric mucosa. The balloon pinch smear was made from yellow mucoid material selected directly from the silk brushes following withdrawal of the balloon from the stomach. The balloon wash smear was made from material obtained after washing the entire surface of the balloon in Ringer's solution.

In the 17 patients proved to have malignant gastric lesions, the routine smears contained no malignant cells

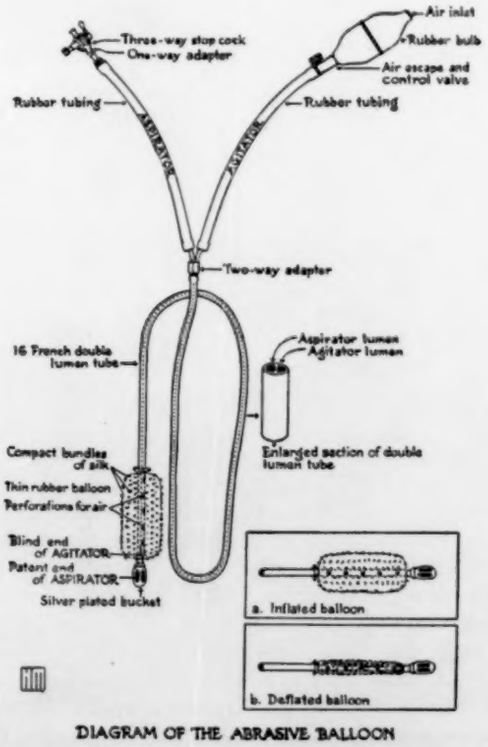

Fig. 2.—Diagram of the abrasive balloon apparatus.

in 12 cases, some suspicious cells in 1 case and malignant cells in 4 cases. This compares with the general results reported from this laboratory. Evidence for the missed diagnoses could be easily ascertained directly from the smear specimens. The diagnostic material was

usually scarce and poorly preserved. In all 5 cases in which material was positive, relatively few malignant cells were found.

The mechanical irritation smears revealed no malignant cells in 3 cases, some suspicious cells in 3 cases and malignant cells in 11 cases. This is a significant improvement over the diagnostic accuracy of the routine smears. Yet, in a few cases the fasting stomachs still yielded enough residual cellular remnants to cause some displacement of the freshly exfoliated malignant cells. This is alleviated by being careful to discard the fasting residue, lavage the stomach clean and irritate the entire mucosal surface.

Analysis of the Cytologic Interpretations of Four Different Gastric Smear Methods Compared by Studying 33 Patients with Known Gastric Pathologic Conditions

Gastric Lesion		Type of Smear	Negative for Malignancy Class 1 or 2	Suggestive of Malignancy Class 3	Positive for Malignancy Class 4 or 5
		Routine	12	1	4
Malignant	17	Mechanical irritation	3	3	11
Carcinoma	14				
Reticulum cell sarcoma	1	Balloon pinch	8	..	9
Hodgkin's disease	2	Balloon wash	2	1	14
		Routine	14	2	..
Benign	16	Mechanical irritation	16	..	..
Polyps	2				
Ulcers	10	Balloon pinch	16	..	..
Gastritis	3				
No disease	1	Balloon wash	16	..	..

Fig. 3.—Photomicrograph of well preserved normal gastric cells (× 600).

The balloon pinch smears revealed no malignant cells in 8 cases and malignant cells in 9 cases. In the 9 positive cases macroscopic fragments of tumor were found adherent to the silk brushes. This material was by far the best for cytologic interpretation because the cell groups were larger and the preservation was excellent. These smears were relatively free of cellular debris.

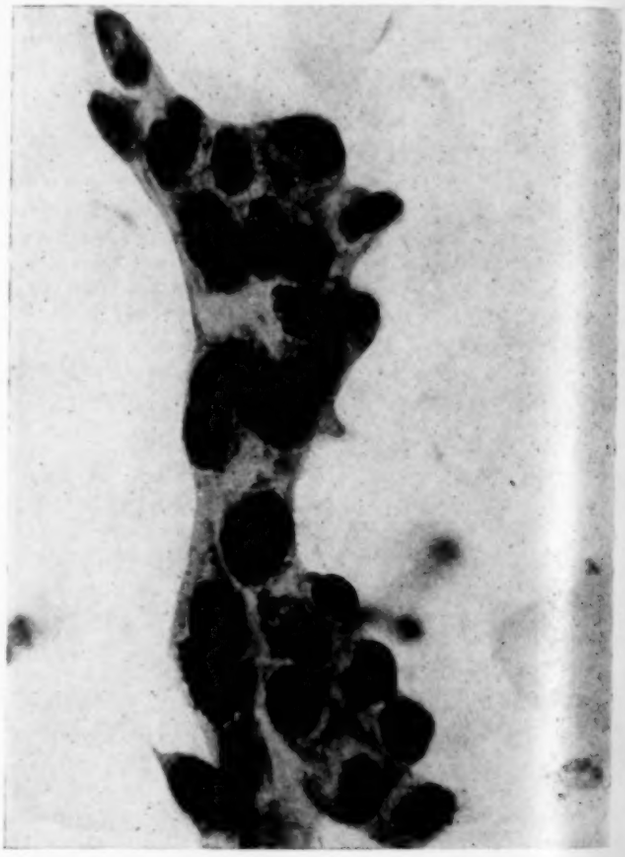

Fig. 4.—Photomicrograph of well preserved gastric cancer cells (× 600).

The balloon wash smears revealed no malignant cells in 2 cases, suspicious cells in 1 case and malignant cells in 14 cases. Many of the malignant lesions yielded microscopic clusters of malignant cells. This material, freshly exfoliated, almost unexposed to the action of the digestive juices and relatively devoid of debris, showed good preservation of all cells (figs. 3 and 4). This made detection and interpretation of the malignant cells much easier. The two false negative smears in this group were diagnosed as Hodgkin's disease of the stomach, a distinctly rare disease.

In the 16 benign or normal stomachs the routine smears were negative for malignant cells in 14 cases. Because of poor preservation a number of specimens were interpreted as only questionably negative and 2 specimens were falsely read as suggestive of malignancy.

The mechanical irritation smears occasionally showed atypical cells, especially when a large quantity of fasting residue was present. With careful preparation of the patient this was less likely to cause concern. Few normal gastric cells were observed in these specimens.

The balloon pinch smears did not show any gross mucosal fragments, and smears made from visible

mucus seldom revealed any normal gastric cells microscopically.

The balloon wash smears showed few confusing atypical gastric cells mainly because of the lack of adherent residue and the improved preservation of all available cells. Atypia of cells associated with inflammatory processes did not present any problems with the improved preservation. Inflammatory cells from active ulcers adhered to the balloon and were seen on the smears. Few normal gastric cells were found to be exfoliated.

All the sections made from the benign lesions were carefully reviewed. The 2 polyps and the 10 ulcers showed no cytologic evidence suggestive of early malignant changes.

COMMENT

The results of collecting gastric cellular material with the abrasive balloon are encouraging when compared with the results of ordinary methods of aspiration and lavage. Mechanical irritation of malignant gastric tissue materially increases the number of exfoliated malignant cells, while irritation of normal gastric tissue does not usually result in the exfoliation of normal gastric cells. Better balloon specimens are obtained when the factor of retention is adequately corrected and when gastric peristalsis has a chance to act on the silk brushes for at least an hour.

The balloon pinch and the balloon wash smears were much superior to the routine and the mechanical irritation smears. The freshly exfoliated cells adherent to the silk brushes showed better morphologic detail because they were not exposed to the destructive action of the digestive juices for any length of time. Although the balloon pinch and the balloon wash smears both show well preserved and abundant material, positive material was more consistently found in the balloon wash smears because the abnormal cellular fragments grossly overlooked were finally secured in the isotonic dispersion medium.

The abrasive balloon is yet to be perfected. However, the application of the principle of mechanical exfoliation improves the quality and quantity of malignant cells found on the gastric smear. Although the accuracy encountered in this preliminary series will probably be reduced when the procedure is applied to routine clinical use, the results give some basis for optimism with regard to the smear technic in the diagnosis of gastric cancer.

SUMMARY AND CONCLUSIONS

1. An inflatable abrasive gastric balloon and a technic for its use in obtaining gastric smears are described.

2. An adequate regimen for ridding pathologic stomachs of the products of retention is described.

3. The gastric cytology of 70 patients is studied by means of the balloon, and the results in 33 cases of confirmed disease are reported.

4. Mechanical irritation of the gastric mucosa causes increased exfoliation of the abnormal proliferative gastric cells.

5. Normal gastric mucosa resists such mechanical exfoliation.

6. Freshly exfoliated gastric cells show better morphologic detail.

7. Malignant gastric lesions may be more readily recognized when adequate amounts of well preserved gastric cells are subjected to cytologic examination.

FOLLOW-UP STUDY OF ONE HUNDRED PRIVATE HYPERTENSIVE PATIENTS WITH CARDIOVASCULAR COMPLICATIONS

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The important and difficult appraisal of the role of sympathectomy in the treatment of hypertension and hypertensive heart disease requires all the follow-up information that is available. There has been much discussion of the status of this therapy in the past with ardent advocates and equally ardent opponents. Time and continued interest in constant improvement both of the selection of cases and of the technics will eventually give the answers. Meanwhile we may hope that some effective treatment less severe and radical than either sympathectomy or rigid diets may be introduced to control hypertension or, still better, to prevent it.

During the past year there was published a review of the effect of sympathectomy on the blood pressure in hypertension in the case of 292 patients on the public wards of the Massachusetts General Hospital.[1] Although the lumbodorsal technic was used on a considerable majority of these patients the supradiaphragmatic and other procedures were also included and various physicians and surgeons took part in the selection of cases and in the actual operation. Most of the patients were free from important cardiovascular complications or symptoms.

To supplement this particular series it has proved worth while to review the effect of sympathectomy in a smaller but special group of private patients of one of us (P. D. W.) also operated on at the Massachusetts General Hospital. These cases differ from the other Massachusetts General Hospital series already referred to in that they were all followed by one physician (P. D. W.), all operated on during the years 1941 to 1946 by one surgeon (Dr. R. H. Smithwick himself) and by one technic (lumbodorsal) and all seriously affected by the hypertension or by coronary disease as shown by the presence of an important cardiovascular complication (myocardial insufficiency, cerebral vascular accident, past myocardial infarction or angina pectoris). Patients with renal insufficiency were excluded because it was known early in this surgical development that they were notoriously poor subjects. Patients with important cardiovascular complications were selected for this follow-up study because they constitute a significant group with generally a poor prognosis. To determine how much good or harm might ensue from surgical intervention in these critical cases would help a great deal in establishing conclusions about the over-all value of this kind of therapy and in particular about the better selection of patients according to indications and contraindications. It should be noted incidentally that other private hypertensive patients of ours without serious cardiovascular complications have, during the past eight years, undergone Smithwick's lumbodorsal sympathectomy with somewhat the same results as the group discussed herein. Because of the

1. Evelyn, K. A.; Alexander, F., and Cooper, S. R.: Effect of Sympathectomy on Blood Pressure in Hypertension: A Review of Thirteen Years' Experience at the Massachusetts General Hospital, J. A. M. A. **140:** 592 (June 18) 1949.

lesser challenge presented by them as therapeutic problems they have not been included.

For comparison, a control group selected from the same private practice of one of us (P. D. W.) was followed for the most part during the same interval of time (that is, from 1941 to 1946) and consisted of the same number of persons, all with serious cardiovascular complications and of similar sex and age incidence, who had not submitted to sympathectomy or to the newest diet or drug therapy, though many had been on somewhat restricted diets (to control weight chiefly) and had been receiving sedatives or the thiocyanates.

It is important to emphasize that a relatively small minority of patients with hypertension need radical therapeutic measures such as sympathectomy, rigorous dieting or the administration of potent drugs. A recent survey of 2,000 patients with hypertension in a New York clinic revealed that only 5 per cent had the malignant type.[2] Probably another 5 or 10 per cent of hypertensive patients show important results of hypertension within a relatively short time, but the majority of such patients have only slight elevation of systolic or diastolic blood pressure or both over periods of many years and are not particularly injured by such slight degrees of hypertension. This is especially true of persons who have primarily systolic hypertension and little or no elevation of diastolic pressure. It is the experience of all practicing physicians that middle-aged or older patients, especially women, with systolic pressures approaching 200 and diastolic pressures of 90 to 100 may do well for many years. In older persons this has sometimes been called the arteriosclerotic type of hypertension.

THE PRESENT STUDY

The 50 hypertensive patients who were treated by lumbodorsal sympathectomy in the years 1941 to 1946 have been followed during the past year and one half. All were accounted for by examination or by determination of their death. The duration of the follow-up for the living persons is three to seven years. The duration of follow-up for the dead is two and one-half months to seven years and nine months. The data have been tabulated by age and sex, complications and present status of the patients (tables 1 and 2). There were 38 men and 12 women in the sympathectomized group. Of the men, 8 were in the 30 to 39 age group, 29 were 40 to 49 and 13 were 50 to 59. Of the women none were in the 30 to 39 age group, 7 were 40 to 49 and 5 were 50 to 59. The 50 patients represented seventy-three instances of cardiovascular complications. The most commonly observed complication was left ventricular weakness or frank failure, which was represented twenty-six times. There were twenty instances of angina pectoris, seventeen of cerebrovascular accident and ten of myocardial infarction.

TABLE 1.—*Hypertensive Patients with Cardiovascular Complications (Series of P. D. W., Operations by Smithwick)*

	Sympathectomized Patients	Controls	Total
Number	50	50	100
Sex			
Male	38	37	75
Female	12	13	25
Ages			
30 to 39	8	6	14
40 to 49	29	32	61
50 to 59	13	12	25
Complications			
Total	73	61	134
Left ventricular weakness	26	23	49
Angina pectoris	20	14	34
Myocardial infarction	10	15	25
Cerebrovascular accident	17	9	26

TABLE 2.—*Follow-Up of Hypertensive Patients with Cardiovascular Complications*

	50 Sympathectomized Patients		50 Controls	
Mortality after the occurrence of the complications				
1 year or less	2 (4%)		8 (16%)	
1 to 2 years	6 (12%)		16 (32%)	
2 to 3 years	8 (16%)		24 (48%)	
Condition three years or more after surgery (or to date)				
Excellent	6 (12%)		0 (—)	
Good	5 (10%)	22 (44%)	1 (2%)	5 (10%)
Fair (definite, though not pronounced improvement)	11 (22%)		4 (8%)	
Unchanged	5 (10%)		3 (6%)	
Worse	11 (22%)		1 (2%)	
Dead	12* (24%)		41 (82%)	

* One death from unrelated cause.

The diagnosis of cerebral vascular accident was made only if there was evidence of hemiplegia, paraplegia or aphasia lasting more than two days. It is realized that even more transitory changes are probably evidence of cerebral infarction, but this qualification was made in an effort to eliminate any instances of spasm. Angina pectoris is a subjective observation and is admittedly difficult to evaluate in degree and seriousness. However, since patients had the same interrogator and examiner (P. D. W.) both before and after operative treatment, a satisfactory evaluation could be made of this complication. The term left ventricular weakness is used rather than congestive failure, since it is important to include patients with the serious type of gallop rhythm or pulsus alternans whether or not congestive phenomena are also present. Myocardial infarction was diagnosed if the clinical picture was substantiated by electrocardiography.

The blood pressures quoted here were obtained during routine office examinations by the same observer under similar conditions and with the patient seated. Most of the patients had been under medical observation for years and were known to have had important degrees of hypertension; also, most of them showed important sequelae of the hypertension (twenty-six instances of heart failure and seventeen of cerebrovascular accident), proving the seriousness of the hypertension.

Finally, a follow-up study of 50 control hypertensive patients not subjected to sympathectomy was made for comparison. There were 37 men and 13 women; six of the controls were in the fourth decade, 32 in the fifth and 12 in the sixth. The 50 controls represented sixty-one instances of cardiovascular complications: twenty-three of left ventricular weakness, nine of cerebrovascular accidents, fourteen of angina pectoris and fifteen of myocardial infarction.

The classification of results observed at the time of follow-up in the 50 sympathectomized patients (table 2) is correlated with a brief review of each patient's course. (The age is that at the time of operation.)

Excellent.—Six patients (cases 1 to 6), whose status at follow-up was excellent, are living, normotensive and free of all symptoms.

2. Perera, G. A.: Diagnosis and Natural History of Hypertensive Vascular Disease, Am. J. Med. 4: 416, 1948.

CASE 1.—P. H., a man aged 44, had had a myocardial infarct prior to operation. The blood pressure was 160 systolic and 115 diastolic, Smithwick type 1.[3] Renal biopsy (according to the degree of vascular changes observed) was grade 2.[4] He was followed three years and three months postoperatively. He lives a normal and active life. His blood pressure is 120 systolic and 87 diastolic. He has had no further cardiovascular symptoms.

CASE 2.—H. L., a man aged 31, a surgeon, had an enlarged heart, exertional dyspnea and gallop rhythm. The blood pressure was 165 systolic and 136 diastolic, Smithwick type 1. Renal biopsy was grade 3. He has been followed five years since sympathectomy; he performs surgical operations daily and carries a full schedule. The blood pressure is 120 systolic and 80 diastolic.

CASE 3.—H. S., a man aged 51, a physician, had a cerebrovascular accident and angina pectoris prior to operation. He was unable to work because of angina. The blood pressure was 155 systolic and 105 diastolic, Smithwick type 1. Renal biopsy was not done. He has been followed three years and three months since operation and is free of symptoms and complications. The blood pressure is 130 systolic and 80 diastolic.

CASE 4.—S. G., a man aged 43, had a cerebrovascular accident prior to operation. The blood pressure was 210 systolic and 140 diastolic, Smithwick type 3. Renal biopsy was grade 4. Follow-up has continued three years and four months since operation. The blood pressure is now 145 systolic and 90 diastolic. He has no cardiac symptoms and carries on all normal activities without difficulty. He has lost considerable weight since operation.

CASE 5.—W. S., a man aged 52, had a cerebrovascular accident prior to operation. The blood pressure was 200 systolic and 100 diastolic, Smithwick type 2. He has been followed three years since operation. The blood pressure is 140 systolic and 90 diastolic. He engages in normal activities without further complications.

CASE 6.—E. R., a man aged 45, had severe angina pectoris before operation, with the blood pressure 170 systolic and 120 diastolic, Smithwick type 1. Renal biopsy was grade 3. Follow-up continued four years and three months postoperatively. The blood pressure is 98 systolic and 76 diastolic.

These six men with excellent results ranged in age from 31 to 52. The average follow-up since the operation has been four years. Renal biopsies were done in 4 instances and were graded 2, 3, 3 and 4. Results of the phenolsulphonphthalein test were normal in all cases.

Good.—The follow-up status of 5 patients (cases 7 to 11, inclusive) was good, though not perfect.

CASE 7.—V. T., a woman aged 46, had had a myocardial infarct and angina pectoris preoperatively. Her blood pressure was 170 systolic and 117 diastolic, Smithwick type 1. Renal biopsy was grade 2. She was followed three years and five months after operation, and she still suffers somewhat from postural hypotension unless she wears leg wraps (following a second, thoracic, sympathectomy for tachycardia, which was thereby controlled).

CASE 8.—J. C. P., a man aged 31, had a cerebrovascular accident, and his blood pressure was 200 systolic and 140 diastolic (Smithwick type 1) prior to operation. He also had headaches, dizziness and blurring of vision. Follow-up continued for three years. The blood pressure is 140 systolic and 100 diastolic. He works daily without symptoms or complaints other than the residuum from the old cerebrovascular accident.

CASE 9.—R. H., a man aged 44, had severe left ventricular weakness before operation. The blood pressure was 240 systolic and 130 diastolic, Smithwick type 3. Renal biopsy was grade 3. Follow-up continued three years and eight months postoperatively. He now is able to shovel snow without difficulty. His blood pressure is 145 systolic and 103 diastolic. Except for the slightly elevated blood pressure he has no evidence of cardiovascular difficulty.

CASE 10.—W. M., a man aged 48, was in severe congestive heart failure prior to surgery, requiring a prolonged period of bed rest and therapy. The blood pressure was 250 systolic and 135 diastolic, Smithwick type 3. Renal biopsy was grade 3. At follow-up examination four years postoperatively the heart has decreased to normal in size. The man works daily and his heart does not require digitalis to remain completely compensated. The blood pressure is 150 systolic and 100 diastolic.

CASE 11.—M. McL., a man aged 45, had nocturnal dyspnea and slight ankle edema prior to operation. The blood pressure was 240 systolic and 140 diastolic, Smithwick type 3. Renal biopsy was grade 3. He has been followed five years since operation. The blood pressure remained fairly well down for almost two years, but when the patient was last seen it had risen to 224 systolic and 132 diastolic. Since operation his heart has remained compensated without therapy.

The results in 1 patient in this group (case 8) would have been considered excellent except for his postoperative blood pressure of 140 systolic and 100 diastolic. Patient V. T. (case 7) has maintained an abnormally low blood pressure and is troubled by dizziness, weakness and palpitation unless she is wearing binders on her legs. The other 3 patients all had serious left ventricular weakness (2 had actual congestive failure) before operation; they recovered to a remarkable degree, their blood pressure is lower, and they have remained well during the past four to five years.

Fair.—At follow-up 11 patients (cases 12 to 22, inclusive) were in fair condition, definitely though not decidedly improved.

CASE 12.—R. F., a man aged 57, had moderate congestive failure. The blood pressure was 180 systolic and 110 diastolic, Smithwick type 2. He was followed three years and two months after operation. Six weeks after operation he had a posterior myocardial infarct; he has recovered and is now normally active. The heart is compensated, and he requires no digitalis. The blood pressure was normal for approximately one year after operation but is now slightly elevated (150 systolic and 100 diastolic when the patient is seated, 135 systolic and 100 diastolic when standing). On severe exertion he has mild angina pectoris.

CASE 13.—R. G., a man aged 51, had severe congestive failure and a cerebrovascular accident before operation. The blood pressure was 230 systolic and 130 diastolic, Smithwick type 3. Renal biopsy was grade 3. He is able to do almost any amount of work without dyspnea three years and eight months after operation. Occasionally he has slight angina pectoris; he had none before operation. The blood pressure is now 190 systolic and 105 diastolic.

CASE 14.—R. R., a man aged 52, before operation had moderately severe angina pectoris, and his blood pressure had been 210 systolic and 130 diastolic, Smithwick type 2. Renal biopsy was grade 3. At follow-up three years and seven months after operation the blood pressure is 150 systolic and 100 diastolic. He has no angina pectoris and works daily. He has gained weight since operation and is much heavier than he should be.

CASE 15.—F. S., a woman aged 53, had had a myocardial infarct prior to operation and was in congestive failure. The blood pressure had been 200 systolic and 130 diastolic, Smith-

3. At the time of the first examination of the patients in the sympathectomized group, Smithwick classified hypertensive patients into the following types:

Type 1.—pulse pressure less than one-half the diastolic blood pressure.

Type 2.—pulse pressure equal to or up to 19 mm. of mercury greater than one-half the diastolic pressure.

Type 3.—pulse pressure 20 mm. or more greater than one-half the diastolic pressure.

4. Specimens for renal biopsy were obtained during sympathectomy, and vascular changes were graded 1 (slight), 2 (more advanced, but mild), 3 (severe, apparent in every vessel) or 4 (most severe) according to the criteria outlined by Castleman, B., and Smithwick, R. H.: The Relation of Vascular Disease to the Hypertensive State, J. A. M. A. **121**: 1256 (April 17) 1943.

wick type 2. Renal biopsy was grade 3. At follow-up three years and one month after operation she takes no medicaments and leads an active life. The blood pressure is 175 systolic and 100 diastolic.

CASE 16.—M. B., a man aged 45, had angina pectoris on effort and perhaps a myocardial infarct before operation. The blood pressure was 190 systolic and 130 diastolic, Smithwick type 1 to 2. At follow-up three years postoperatively he is feeling well and the blood pressure is 180 systolic and 100 diastolic.

CASE 17.—M. A., a woman aged 56, had a cerebrovascular accident preoperatively. The blood pressure was 190 systolic and 100 diastolic, Smithwick type 3. Renal biopsy was grade 3. At follow-up three years and ten months after operation her blood pressure has remained at about the preoperative levels of 190 systolic and 100 diastolic. However, she no longer has pressor phases, which had precipitated two episodes of encephalopathy before she underwent operation. She has been active, and except for some residual paralysis from her old cerebrovascular accident she has no difficulty.

CASE 18.—M. B., a man aged 44, had severe congestive failure before operation. The blood pressure was 230 systolic and 130 diastolic, Smithwick type 3. Renal biopsy was grade 4. He was followed four years and five months. He works daily with his only complaint that of slight dyspnea on effort. The blood pressure was lower for two years but has now returned to preoperative levels, 240 systolic and 130 diastolic.

CASE 19.—S. D., a woman aged 40, was in moderately severe congestive failure before operation. The blood pressure was 250 systolic and 160 diastolic, Smithwick type 2. Renal biopsy was grade 3. Follow-up has continued five years since operation. She is again experiencing some, though less severe, congestive failure. In the five year interim she worked forty hours a week in a defense plant during and after the war. The blood pressure is 180 systolic and 120 diastolic.

CASE 20.—R. F., a man aged 39, had grade 3 left ventricular weakness before operation. The blood pressure was 195 systolic and 125 diastolic, Smithwick type 2. Renal biopsy was grade 4. He has been fully compensated since operation three years ago and is able to work daily. The blood pressure remained lowered for approximately one year but has now returned almost to preoperative levels, 175 systolic and 125 diastolic.

CASE 21.—D. L., a woman aged 41, preoperatively had had a myocardial infarct and angina pectoris decubitus. The blood pressure was 200 systolic and 120 diastolic, Smithwick type 3. Renal biopsy was grade 3. Follow-up continued four years and nine months. After operation her blood pressure fell, but it is now approaching preoperative levels of 178 systolic and 110 diastolic.

CASE 22.—A. McD., a man aged 47, had blood pressure of 244 systolic and 140 diastolic, Smithwick type 3, and severe angina pectoris preoperatively. Follow-up was continued four years and nine months after operation. He still has angina pectoris but to a lesser degree. The blood pressure is 182 systolic and 96 diastolic, a considerable drop.

In general these 11 patients (cases 12 to 22, inclusive) were older persons with Smithwick grading of types 2 and 3. Six had renal biopsies of grade 3 and 2 of grade 4. The most impressive results were obtained in those instances in which myocardial weakness and failure had been the principal complications. Improvement occurred although the blood pressure did not return wholly to normal. In 6 cases it was substantially reduced and remained so. The heart of 1 patient who had congestive failure before operation is now fully "compensated," although he had a myocardial infarct shortly after operation and now has slight angina pectoris (case 12).

Any physician seeing considerable numbers of hypertensive patients with serious cardiovascular complications can cite rare cases in which, although surgical operation was not performed, improvement occurred similar to that described in the foregoing cases. The significant point about the 22 favorable cases described with excellent, good or fair follow-up status is that they represent 44 per cent of the total of 50 cases.

Unchanged.—At follow-up the status of 5 patients (cases 23 to 27, inclusive) was unchanged, although possibly with prolongation of life in some instances.

CASE 23.—E. D., a man aged 39, had had a cerebrovascular accident preoperatively. The blood pressure was 190 systolic and 135 diastolic, Smithwick type 1. Renal biopsy was grade 3. Postoperative follow-up continued four years. At present he has no cardiovascular complications, but the blood pressure remains at the preoperative level, 198 systolic and 128 diastolic.

CASE 24.—M. D., a man aged 41, had slight dyspnea and a gallop rhythm before operation. The blood pressure was 225 systolic and 130 diastolic, Smithwick type 3. Renal biopsy was grade 3. At follow-up four years and eleven months after operation the blood pressure was 220 systolic and 110 diastolic. He is able to work without evidence of congestive failure but only with sodium restriction, digitalis therapy and definite limitation of activity. He is now receiving potassium thiocyanate and veratrum viride.

CASE 25.—S. T., a man aged 38, had moderately severe left ventricular failure before operation, with blood pressure 190 systolic and 110 diastolic, Smithwick type 3, and renal biopsy grade 4. At follow-up three years and seven months after operation the blood pressure was 200 systolic and 110 diastolic. At first he had some fall in blood pressure and some improvement in symptoms. However, congestive failure intervened and he is now on a strict rice diet, which is effective in keeping his pressure lower. His heart is fairly well compensated.

CASE 26.—C. S., a woman aged 46, with blood pressure 200 systolic and 110 diastolic, Smithwick type 3, had moderately severe angina pectoris before operation. Renal biopsy was grade 3. Follow-up has continued five years and four months since operation. The blood pressure is 200 systolic and 110 diastolic. The patient still has angina pectoris. She is trying the rice diet but not too conscientiously.

CASE 27.—O. P., a man aged 45, had moderate angina pectoris and left ventricular weakness prior to operation. The blood pressure was 190 systolic and 110 diastolic, Smithwick type 3. Renal biopsy was grade 2. At follow-up five years postoperatively the blood pressure is 190 systolic and 100 diastolic. The heart remained "compensated" for three years after operation, but in the past year he has required hospitalization on two occasions for treatment of congestive failure. He is now trying the rice diet.

These 5 patients were probably benefited little by the sympathectomy. Since 3 or 4 of them were in poor condition with severe myocardial or coronary insufficiency prior to operation, it seems probable that their life has been prolonged. As shown by Wilkins, Culbertson and Halperin,[5] the abolition of hypertensive peaks and crises that occurs after sympathectomy may have a beneficial effect even though the actual blood pressure levels are not much altered.

Worse.—At follow-up the condition of 11 patients (cases 28 to 38, inclusive) was worse.

CASE 28.—D. B. A., a woman aged 46, preoperatively had angina pectoris, left ventricular weakness and myocardial infarction. The blood pressure was 203 systolic and 140 diastolic, Smithwick type 1. Renal biopsy was grade 2. Follow-up was maintained four years and ten months. Since operation she has had at least two myocardial infarcts and is in definite cardiac failure. The blood pressure has been somewhat reduced, but the repeated infarcts and congestive failure make its evaluation difficult.

CASE 29.—O. D., a man aged 46, preoperatively had angina pectoris and coronary occlusion. The blood pressure was 250

5. Wilkins, R. W.; Culbertson, J. W., and Halperin, M. H.: The Hemodynamic Effects of Sympathectomy in Essential Hypertension, Am. Int. Med. **30**: 291, 1949.

systolic and 125 diastolic, Smithwick type 3. Five years and ten months postoperatively the blood pressure was 220 systolic and 110 diastolic. Further myocardial infarction did not occur, but since operation he has maintained an elevation in blood pressure and heart failure has developed. He has had several episodes of frank pulmonary edema.

CASE 30.—M. H., a woman aged 54, had had a cerebrovascular accident before operation. The blood pressure was 220 systolic and 110 diastolic, Smithwick type 3. Follow-up three years and one month postoperatively disclosed blood pressure of 168 systolic and 115 diastolic. Further cerebrovascular accidents did not occur, but the heart has steadily failed. There is now considerable left ventricular weakness. The patient has severe back pain since the operation. She had had several episodes of hypertensive crisis prior to operation but has had none since.

CASE 31.—S. J., a woman aged 46, preoperatively had a blood pressure reading of 190 systolic and 130 diastolic, Smithwick type 1, with angina pectoris and left ventricular weakness (grade 3). At follow-up four years and seven months postoperatively the blood pressure was 190 systolic and 108 diastolic. Congestive failure has become more severe and she is now leading a bed and chair existence.

CASE 32.—A. K., a man aged 53, with blood pressure 184 systolic and 122 diastolic, Smithwick type 1, had a cerebrovascular accident prior to operation. Renal biopsy was grade 3. Follow-up has continued four years and two months since operation. The blood pressure now is 184 systolic and 130 diastolic. He has had another cerebrovascular accident and is in moderate congestive failure. He is still able to work, but he cannot be offered as an example of benefit from the operation.

CASE 33.—J. McC., a man aged 48, with blood pressure 215 systolic and 130 diastolic, Smithwick type 3, had a myocardial infarct prior to operation. Renal biopsy was grade 3. At follow-up three years and eight months after operation the blood pressure now is 210 systolic and 125 diastolic. He has had a cerebrovascular accident since operation; the auricles are fibrillating, and the heart is in mild congestive failure.

CASE 34.—M. P., a man aged 47, had a cerebrovascular accident prior to operation. The blood pressure was 240 systolic and 140 diastolic, Smithwick type 3. Renal biopsy was grade 4. He had some early improvement after operation, but he has since had a myocardial infarct. The blood pressure is 176 systolic and 110 diastolic. He is now on a rice diet regimen. Follow-up has continued three years and one month since operation.

CASE 35.—M. P., a woman aged 51, prior to operation had a myocardial infarct, angina pectoris and considerable left ventricular weakness. The blood pressure was 170 systolic and 110 diastolic, Smithwick type 2. Renal biopsy was grade 3. At follow-up five years postoperatively the blood pressure is 150 systolic and 100 diastolic. Angina pectoris continues. The patient is in moderate congestive failure, and the blood pressure is kept at this lower level by strict adherence to the rice diet.

CASE 36.—I. R.; a man aged 46, had angina pectoris prior to operation. The blood pressure was 205 systolic and 135 diastolic, Smithwick type 2. Renal biopsy was grade 3, with question of pyelonephritis. Follow-up continued five years postoperatively. The blood pressure is 180 systolic and 120 diastolic. This man has severe angina pectoris on minimal effort.

CASE 37.—C. S., a man aged 39, had a cerebrovascular accident, angina pectoris and gallop rhythm before operation. The blood pressure was 252 systolic and 136 diastolic, Smithwick type 3. Renal biopsy was grade 4. At follow-up four years and seven months postoperatively the blood pressure is now 220 systolic and 130 diastolic. His angina pectoris continues, and his congestive failure has increased. He is now doing fairly well with the addition of a rice diet to his therapeutic regimen.

CASE 38.—H. W., a man aged 57, before operation had a cerebrovascular accident, angina pectoris, myocardial infarction and left ventricular weakness. The blood pressure was 190 systolic and 120 diastolic, Smithwick type 2. Renal biopsy was grade 3. Follow-up has lasted six years and eight months since operation. He has managed to remain active in spite of further cerebrovascular accidents, myocardial infarcts, persisting angina pectoris and continued failure. His blood pressure is now 180 systolic and 110 diastolic. He is now 64 years of age.

These patients are distinctly worse after this follow-up interval. However, as in the instance of those whose condition was unchanged at follow-up, there may have been some increase of length of life as the result of the operation. In several cases there has been a distinct lowering of blood pressure (for example, in M. P., case 35, from 240 systolic and 140 diastolic to 176 systolic and 110 diastolic) after an interval of three years.

Dead.—At follow-up 12 patients (cases 39 to 50, inclusive) were dead (1 from an unrelated cause).

CASE 39.—D. B., a woman aged 51, preoperatively had angina pectoris and severe congestive heart failure. The blood pressure was 190 systolic and 115 diastolic, Smithwick type 3. Renal biopsy was grade 3. The patient died one year and three months postoperatively. The congestive failure had improved decidedly, but the angina pectoris became so severe as to be present even when the patient was at rest. She had a myocardial infarct. Death occurred an hour after an operation designed to cut the afferent pain pathways from the heart. The heart ceased beating during the operation, but the patient was revived temporarily.

CASE 40.—J. B., a man aged 47, with blood pressure 258 systolic and 158 diastolic, Smithwick type 3, had moderately severe congestive failure prior to operation. Renal biopsy was grade 3. He died one year and nine months postoperatively from congestive failure. He had improved for a short while after operation, but he then gradually failed and died in congestion. The blood pressure about one year after operation was 220 systolic and 120 diastolic.

CASE 41.—A. G., a man aged 38, had gallop rhythm before operation. The blood pressure was 220 systolic and 150 diastolic, Smithwick type 1. Renal biopsy was grade 3. The patient died one year and three months postoperatively of congestive failure. He had not cooperated after surgical treatment, inasmuch as he gained considerable weight, worked hard and smoked heavily.

CASE 42.—B. K., a man aged 44, had angina pectoris before operation and was in mild congestive failure, with the blood pressure 260 systolic and 160 diastolic, Smithwick type 3. Renal biopsy was grade 4. He died three years and one month postoperatively of uremia and congestive failure. His course was downhill, and vigorous treatment was required to keep him alive for the three years period.

CASE 43.—H. L., a man aged 53, had a cerebrovascular accident before operation. The blood pressure was 220 systolic and 120 diastolic, Smithwick type 3. The patient died seven years and nine months after operation, from congestive failure and acute pulmonary edema. He had shown mental deterioration during the intervening years but had been able to work until the later months. Seven years after the operation his blood pressure was 180 systolic and 108 diastolic.

CASE 44.—L. L., a man aged 40, had a cerebrovascular accident before operation. The blood pressure was 210 systolic and 120 diastolic, Smithwick type 3. Renal biopsy was grade 3. The patient died four and one-half years after operation, probably from a cerebrovascular accident. The blood pressure fell during the first year, but by the second year it had returned to preoperative levels.

CASE 45.—T. L., a man aged 43, had a cerebrovascular accident preoperatively and was in moderately severe congestive failure. The blood pressure was 230 systolic and 140 diastolic, Smithwick type 3. Renal biopsy was grade 3. The patient died eleven months postoperatively from continued congestive failure and a cerebrovascular accident. The blood pressure after operation was 200 systolic and 140 diastolic.

CASE 46.—M. T., a man aged 42, prior to operation had angina pectoris and a myocardial infarct and was in left ventricular failure. The blood pressure was 175 systolic and 125 diastolic, Smithwick type 1. Renal biopsy was grade 2. The man did not recover after operation. Angina decubitus and severe congestive failure developed, and he expired in the hospital two and one-half months postoperatively. Autopsy revealed new and old myocardial infarcts.

CASE 47.—I. T., a woman aged 47, prior to surgical treatment had had a cerebrovascular accident, also rheumatic heart disease with auricular fibrillation. The blood pressure was 230 systolic and 130 diastolic. The woman died two years and eight months postoperatively from a cerebrovascular accident. This may have been associated with the auricular fibrillation. However, her blood pressure had not been lowered and was 240 systolic and 130 diastolic two years after operation.

CASE 48.—J. W., a man aged 30, prior to operation had had gallop rhythm, retinal hemorrhages and papilledema. The blood pressure was 250 systolic and 180 diastolic. Renal biopsy was grade 3. The patient died suddenly one year and ten months after operation. The blood pressure had been reduced for the first year and had then returned to preoperative levels. The heart had remained compensated during the interim.

CASE 49.—D. W., a man aged 47, had gallop rhythm and slight effort dyspnea before operation. The blood pressure was 210 systolic and 130 diastolic, Smithwick type 2. Renal biopsy was grade 3. This man died three years and ten months after operation. The blood pressure had dropped during the first year, but it later returned to the 200 systolic and 120 diastolic level. The patient had a myocardial infarct and angina pectoris; he died in severe congestive failure.

CASE 50.—E. N., a man aged 40, had had a myocardial infarct prior to operation. The blood pressure was 180 systolic and 115 diastolic, Smithwick type 2. Renal biopsy was grade 1. The patient died from acute leukemia three years and nine months after operation. He had done well for a while postoperatively. Angina pectoris developed, which may have been partly associated with his anemia. His death is considered to be due to an unrelated cause.

TABLE 3.—*Scoring of Hypertensive Patients for Thoracolumbar Sympathectomy (Smithwick)**

	Adverse Points
Age 50 or over	1
Abnormal electrocardiogram	1
Enlarged heart	1
Heart failure: impending	1
frank congestion	2
Angina pectoris: mild	1
moderate	2
C. V. A. without or with minor residual	1
C. V. A. with residual	2
P. S. P. 20 to 25% in 15 min. or 60% in 2 hr	1
P. S. P. 15 to 20% in 15 min	2
P. S. P. less than 15% in 15 min	3
Unsatisfactory response to sedation	2
Nitrogen retention	4

Numerical Grade Less Than 4		Numerical Grade† 4 or More	
Group 1 (Smithwick)	Women and men with eyegrounds grade 0 or 1 Women with eyegrounds grade 2 or 4	Group 3	Resting diastolic level below 140 mm. C. V. A. with residual, or frank congestive failure, or P. S. P. below 15% in 15 min. and poor response to sedation not present
Group 2	Women with eyegrounds grade 3 Men with eyegrounds grade 2, 3 or 4	Group 4	Same as 3 except that one or more of the cardiovascular changes referred to are present
		Group 5	Resting diastolic level 140 mm. or more regardless of cardiovascular changes

* C. V. A. denotes cerebrovascular accident; P. S. P. denotes phenolsulfonphthalein excretion.

† Groups 4 and 5 have been shown by Smithwick on a large statistical material to be distinctly unsuitable for sympathectomy; group 3 is borderline and has contained many cases that have turned out well.

Eleven patients of the original group of 50 died from complications of hypertension. One other patient died from leukemia three years and nine months after operation. Six of the 11 patients died within the first year and ten months. This might serve as an index to the severity of the illness of the entire group. None of the patients died during the sympathectomy, although 1 patient (case 46) remained bedridden after the operation and died two and one-half months later and another patient (case 39) died during a second operative procedure to relieve her angina pectoris. Several of the patients whose condition was worse at follow-up are quite ill and will doubtless join the last group in a short time.

RESULTS IN FIFTY CONTROL CASES

No completely adequate control series is available for comparison with the sympathectomized group, therefore it is difficult to appraise the results. With full realization of the inaccuracies and variable factors involved in such a selection, we have gathered a group of 50 cases from our private (P. D. W.) files. This group has been selected for age, sex and cardiac complications so that in these respects it is comparable roughly to the surgical series. Although the 50 cases cannot be considered to be perfect controls, it is of significance that they include data on 7 persons who were considered and recommended for the sympathectomy but for various reasons did not have it. These 7 were all men, ranging in age from 33 to 55. By the third year of the follow-up 3 were dead of the complications of hypertension, 1 was bedfast as a result of a second cerebrovascular accident, 1 had severe congestive failure, 1 was continuing to have angina pectoris without reduction in his blood pressure and the last of the 7 continues to have the same degree of hypertension without progression of symptoms. The death rate in this group is approximately the same as that for the total group of nonsurgical cases, namely, 42 per cent. In the surgical group there were 8 deaths (16 per cent) within three years of the time of the preoperative complications; in this same interval 24 deaths had occurred in the 50 controls (48 per cent).

TABLE 4.—*Grading of 50 Sympathectomized Hypertensive Patients with Cardiovascular Complications According to Smithwick's Grouping* and Actual Results in Three Year Follow-Up†*

Graded by Smithwick's Scoring*		Actual Follow-Up Results† A	B	C	D
Group 1	7	3	2	1	1‡
Group 2	11	3	3	2	3
Group 3	19	5	5	2	7
Group 4	12	..	1	..	11
Group 5	1	..	..	..	1
Total	50	11	11	5	23

* Criteria for Smithwick's grouping are outlined in table 3.

† The patients' actual condition on follow-up, including blood pressure (P. D. W.'s observations), is graded: *A*, excellent or good; *B*, fair (some improvement); *C*, unchanged, or *D*, worse or dead.

‡ Completely uncooperative.

Review of Selection of Patients for Sympathectomy Based on a New System of Scoring.—What is obviously needed more than anything else in improving the results of this radical method of treatment of serious hypertension (which, though empiric, is to date the best method of therapy that we possess for certain young and middleaged men and women with this condition)

is a better method of selection. We would like to know, if possible, why failure occurred in a substantial number of the cases reported in this paper. Hence, we have reappraised these cases in retrospect on the basis of a new system of scoring that has been proposed and revised several times by Dr. Smithwick,[5a] to whom we are grateful for aid and advice. Table 3 illustrates this new method of scoring. On the basis of this tabulation of marks it would seem to have been possible to have excluded the majority of the unfavorable cases, as noted in table 4. We hope that the application of this method of scoring may be useful in the future. It is based on a simple set of black marks against the person under study based on all sorts of tests. Renal insufficiency still stands preeminent as a contraindication.

SUMMARY AND CONCLUSIONS

We have presented a follow-up analysis of a series of 50 private hypertensive patients with serious cardiovascular complications who underwent lumbodorsal (thoracolumbar) sympathectomy by Dr. Reginald Smithwick in the years 1941 to 1946. We have compared them with 50 controls, private hypertensive patients of similar sex, age and cardiovascular complications, who were treated medically.

The sympathectomized patients included 38 men and 12 women; 8 of the 50 were between the ages of 30 and 40, 29 between 40 and 50 and 13 between 50 and 60. They showed a total of seventy-three complications: left ventricular weakness and failure in twenty-six; cerebrovascular accidents in seventeen; angina pectoris in twenty, and myocardial infarction in ten.

The 50 control cases included 37 men and 13 women; 6 of the controls were between the ages of 30 and 40, 32 between 40 and 50 and 12 between 50 and 60. These had a total of sixty-one complications; left ventricular weakness and failure in twenty-three; cerebrovascular accidents in nine; angina pectoris in fourteen, and past myocardial infarction in fifteen.

After a three year follow-up of the 50 sympathectomized patients the result was excellent or good in 11 and fair with definite, though not decided, improvement in 11; in 5 instances there was little or no change; 11 patients were worse, and 12 were dead. In contrast, among the controls, only 1 patient continued to be in good condition, 4 were in fair condition with some improvement, 4 were unchanged and 41 were worse or dead.

After the occurrence of the complications in the two groups the mortality in one year or less was 4 per cent of the sympathectomized patients and 16 per cent of the controls; in one to two years, 12 per cent of the sympathectomized and 32 per cent of the controls, and in two to three years, 16 per cent of the sympathectomized and 58 per cent of the controls. Thus, the sympathectomized hypertensive patients with serious cardiovascular complications showed by follow-up analysis a considerably better status both in mortality and morbidity than did the nonsympathectomized persons. This is more impressive evidence of the beneficial effect of this therapeutic measure in certain cases than is the usual method of studying the effect on blood pressure alone in cases in which important complications do not exist.

The large number of failures still present a challenge, and this we are trying to meet by the method of selection. A revised system of scoring for such selection has recently been introduced by Smithwick and would evidently have been helpful in excluding a considerable proportion of the cases herein reported in which unfavorable results were obtained in the sympathectomized patients.

5a. Smithwick, R. H.: Personal communication to the authors.

ADDENDUM

Chavez and Méndez[6] have had somewhat the same experience as that noted here in the majority of 22 patients with hypertensive heart disease involving serious cardiac weakness; considerable improvement was experienced by the patients after lumbodorsal sympathectomy had reduced the blood pressure. As a result of this experience, they are inclined to favor this radical therapy particularly in such cases rather than in ordinary cases of hypertension in patients without much cardiac involvement.

ENDOCRINE CONTROL OF PROSTATIC CARCINOMA

Clinical and Statistical Survey of 1,818 Cases

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For the past eight years we have been privileged to witness a revolutionary transformation in the treatment of prostatic carcinoma through endocrine control, an advance based largely on the work of Charles Huggins. The physician has seen the original enthusiasm attendant on this discovery become tempered by the knowledge that the benefits were not universal, that the degree and duration of response were variable and that eventually most patients experienced relapse and subsequent death from the primary disease. The physician has been confronted with problems concerning the selection of the form of endocrine modification most efficacious for the particular needs of the patient, the designation of the most opportune time to institute therapy and the choice of secondary therapy once relapse has occurred.

The answer to these and many other questions should be found in the clinical evaluation afforded this form of therapy by its use in thousands of patients since its introduction in 1941. As simple as this would appear to be, the hidden limitations incident to such a survey are formidable and to date have precluded a satisfactory presentation of data of statistical significance. In an effort to overcome the statistical restrictions imposed by analyses of results in small numbers of cases, a group of physicians representing a cross section of standard urologic practice in the North American Continent elected to pool their collected cases for purposes of study. In order to standardize the collection and presentation of data a prescribed printed form was employed for reporting all information of significance from the standpoint of diagnosis, therapy and follow-up.

6. Chavez, I., and Méndez, L.: El tratamiento quirúrgico de la cardiopatía hipertensiva y de la insuficiencia cardiaca del hipertenso, Arch. Inst. cardiol. México **18**: 680, 1948; and personal communication to the authors.

This study was made possible through a grant from the United States Public Health Service.

Mr. Kurt Benjamin of the Department of Medical Statistics, University of Michigan, assisted in compilation of these data.

The information presented is based on statistical analyses and clinical evaluation of case material contributed through the cooperative efforts of Drs. E. P. Alyea, G. F. Cahill, M. F. Campbell, F. H. Colby, J. E. Heslin, H. J. Jewett, J. C. McClelland, R. M. Nesbit, V. J. O'Conor, G. C. Prather, W. W. Scott, E. C. Shaw, P. G. Smith and W. H. Toulson. We have been commissioned by this group to submit the results of these studies in this form.

CRITERIA FOR STUDY

In all instances only those cases were utilized in which diagnosis was a certainty through microscopic examination of tissue or, lacking biopsy, in which laboratory and roentgen ray examinations confirmed the clinical diagnosis made by competent urologists. In all cases under consideration treatment was by orchiectomy alone, by estrogen alone or by a combination of the two used concomitantly and continually. Patients who were given estrogen received the equivalent of 1 to 5 mg. of diethylstilbestrol orally each day. No patient was included in this study whose initial dosage was greater than this amount. For purposes of study these three treatment groups were further subdivided on the basis of the presence or absence of metastases to lymph nodes or bone at the time of first admission. Even though an elevation of acid phosphatase level is universally regarded as evidence of metastatic activity of prostatic carcinoma, this sign alone was not accepted as conclusive evidence of metastases in the present survey.

The survival statistics are based on an examination of 1,818 submitted cases. Since only those patients were used whose treatment was instituted during the same year and who could be followed at six month intervals for three or five years, the actual number included in our series has been limited to 947 patients followed for thirty-six months and 607 patients followed for sixty months. Survival data on these two series were compared with data on a control group of 795 untreated patients followed for a similar period of time. The data obtained from study of the latter group have been reported previously by Nesbit and Plumb.[1] The data on survival were subjected to statistical analyses using the Chi square formula, a test of independence, with the Yates correction. The differences were considered of statistical significance only when it could be shown that they might arise by chance in only 1 of 100 samples or less frequently.

TABLE 1.—*Three Year Survival of 947 Patients with Prostatic Carcinoma**

	Percentage Survival at 6 Mo. Intervals						No. Eligible	Percentage Dead Not Due to Carcinoma
	6 Mo.	12 Mo.	18 Mo.	24 Mo.	30 Mo.	36 Mo.		
With and without metastases on admission								
Control	66.6	51.2	38.1	30.6	25.0	21.9	781	..
Diethylstilbestrol	91.1	79.5	68.5	58.0	45.8	39.5	238	22
Orchiectomy	89.4	79.2	67.9	60.4	54.7	45.3	451	20
Dieth. and orch.	93.7	89.8	75.6	65.4	58.7	54.2	254	25
No metastases on admission								
Control	72.0	54.0	39.0	32.0	25.0	22.0	273	..
Diethylstilbestrol	90.7	82.2	75.6	69.1	56.2	49.7	142	34
Orchiectomy	91.6	84.9	74.0	65.9	62.2	53.4	239	26
Dieth. and orch.	95.6	89.3	82.3	76.0	70.0	60.0	159	37
Metastases on admission								
Control	69.0	47.0	31.0	20.0	14.0	11.0	231	..
Diethylstilbestrol	91.0	75.0	59.0	43.0	33.0	26.0	100	15
Orchiectomy	86.7	72.8	60.4	52.7	46.0	36.4	212	16
Dieth. and orch.	90.5	78.8	64.0	47.1	38.3	35.2	95	10

* A comparison of the three forms of therapy and the control series of 781 patients (Nesbit and Plumb[1]) in the presence and absence of metastases on first admission.

TABLE 2.—*Five Year Survival of 587 Patients with Prostatic Cancer**

	Percentage Survival at 6 Mo. Intervals										No. Eligible	Percentage Dead Not Due to Carcinoma
	6 Mo.	12 Mo.	18 Mo.	24 Mo.	30 Mo.	36 Mo.	42 Mo.	48 Mo.	54 Mo.	60 Mo.		
With and without metastases on admission												
Control	66.6	51.2	38.1	30.6	25.0	21.9	18.5	17.1	15.8	9.1	504	..
Diethylstilbestrol	94.6	80.9	67.0	55.7	47.0	40.0	31.5	21.8	20.0	18.3	115	26
Orchiectomy	88.9	77.2	65.0	58.2	53.7	43.5	38.2	32.7	29.9	26.2	359	28
Dieth. and orch.	96.5	86.8	80.6	68.2	66.4	62.9	53.1	50.4	47.0	36.3	113	21
							Endocrine therapy, average, 26.9					
No metastases on admission												
Control	72.0	54.0	39.0	32.0	25.0	22.0	....	14.0	....	10.0	273	..
Diethylstilbestrol	93.7	88.9	82.6	76.2	63.5	55.6	43.0	33.5	31.0	29.0	63	33
Orchiectomy	90.8	83.7	72.0	65.1	61.3	51.4	45.0	37.7	35.0	31.2	183	22
Dieth. and orch.	93.6	84.7	80.8	74.4	71.8	65.4	57.8	53.9	53.9	43.6	78	30
							Endocrine therapy, average, 34.3					
Metastases on admission												
Control	69.0	47.0	31.0	20.0	14.0	11.0	....	9.0	....	6.0	231	..
Diethylstilbestrol	96.4	71.2	48.0	30.8	25.0	21.2	15.4	13.4	13.4	9.7	52	15
Orchiectomy	87.0	69.9	68.0	50.6	45.5	35.3	31.3	27.3	24.5	21.6	176	13
Dieth. and orch.	99.0	91.5	80.0	54.3	54.3	48.6	42.9	40.0	31.5	20.0	35	11
							Endocrine therapy, average, 17.1					

* A comparison of the three forms of treatment and a control series of 504 patients (Nesbit and Plumb[1]) in the presence and absence of metastases.

SCOPE OF THE STUDY

The following data have been assembled in charts 1, 2, 3 and 4 and in tables 1, 2 and 3: A comparison of three and five year survivals under the three forms of therapy; the influence of metastases to lymph nodes and bone on three year survivals and on five year survivals in treated patients, and the effect of additional, modified therapy in the treatment of relapse.

Relation of the Type of Therapy to Survival.—Three and five year survivals are significantly greater in endocrine-controlled patients than among others. Castration alone and diethylstilbestrol alone appear to have about the same value in the treatment of cancer of the

1. Nesbit, R. M., and Plumb, R. T.: Prostatic Carcinoma, Surgery **20**: 263, 1946.

prostate when metastases have not yet occurred, but a combination of the two forms of therapy provides a survival advantage over either castration or estrogen alone. In patients having metastases the influence of

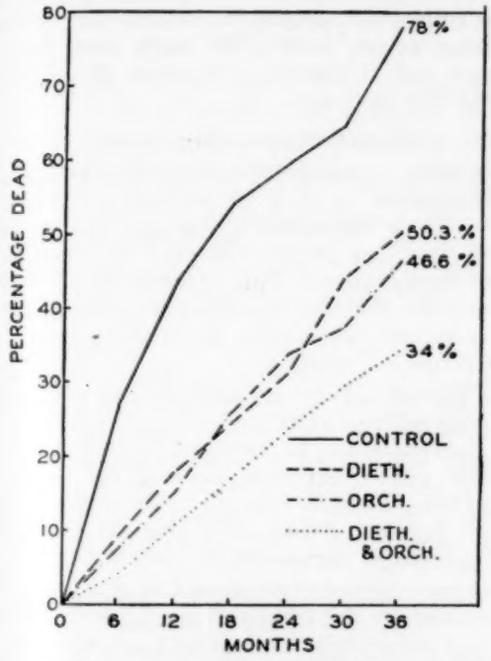

Chart 1.—Three year survival of 540 patients with prostatic cancer treated by castration and/or estrogen therapy who were without metastases on first admission. A comparison of the three forms of treatment and a control series of 273 patients (Nesbit and Plumb[1]) showing the percentage dead at six month intervals after institution of therapy.

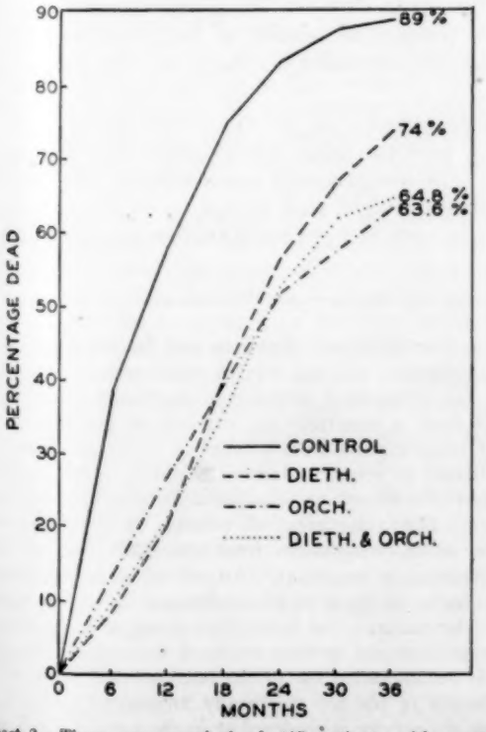

Chart 2.—Three year survival of 417 patients with prostatic cancer treated by castration and/or estrogen therapy who had metastases on first admission. A comparison of the three forms of treatment and a control series of 231 patients (Nesbit and Plumb[1]) showing the percentage dead at six month intervals after institution of therapy.

castration and/or estrogen therapy on longevity is still effective, but to a lesser degree when the comparison of three year survival and of five year survivals is made with results in the control series. It is noteworthy that estrogen alone appears to be less effective than orchiectomy alone. Statistical analysis reveals the astonishing fact that five year survivals of patients given estrogen therapy alone are not significantly greater than the five year survivals of those in the control group. Furthermore, the percentage of five year survival is no greater with combined therapy than with orchiectomy alone.

It is not our purpose herein to speculate on the reason for these differences. However, a large number of patients with widespread metastases do respond spec-

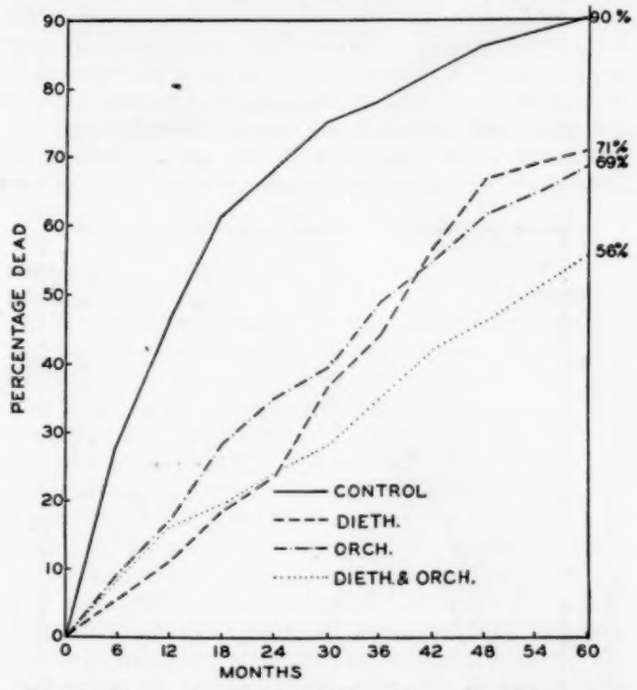

Chart 3.—Five year survival of 324 patients with prostatic cancer treated by castration and/or estrogen therapy who were without metastases on first admission. A comparison of the three forms of treatment and a control series of 273 patients (Nesbit and Plumb[1]) showing the percentage dead at six month intervals after institution of therapy.

tacularly to estrogen therapy alone, and many of these enjoy prolonged remission. When this known clinical fact is considered, estrogen therapy cannot be dismissed as valueless. The data demonstrate conclusively the

TABLE 3.—*Comparison of Estrogen Therapy and Castration* in Relapse*

Condition on Admission	No. of Patients	Primary Treatment		Treatment of Relapse	No Relief from Treatment		Additional Benefit Noted	
		No. Pts.	Type	Type	No. Pts.	%	No. Pts.	%
No metastases	92	47	Castration	Estrogen	33	71	14	29
		45	Estrogen	Castration	29	66	16	34
Metastases	121	82	Estrogen	Castration	54	64	28	36
		39	Castration	Estrogen	32	83	6	17

* Results when the alternate form of therapy is used in the treatment of relapse in the presence and in the absence of metastases on first admission.

grave prognostic significance of metastases; 30 per cent of patients with metastases showed no response whatever to castration and/or estrogen therapy, an indication of a high incidence of androgen independence. Yet there are many patients with widespread metastases who enjoy complete and prolonged remission on retreatment, an indication that the presence of metastases does not always imply a state of androgen independence. One patient in the University of Michigan series had widespread metastatic activity with resultant complete transverse myelitis. He regained the use of his legs after

castration and has remained clinically well for seven years.

Effect of Modified Therapy in the Treatment of Relapse.—The effectiveness of further treatment after relapse has been the concern of all physicians who treat cancer of the prostate gland. Some physicians believe that further benefits may be derived from additional therapy or a change in the form of treatment. In the present study 213 patients who originally were treated with one form of therapy alone (either castration or estrogen) were then treated for relapse by the other form of therapy. The data on these patients are enumerated in table 3. Symptomatic relief was reported in as high as 36 per cent of the patients who had modified therapy. The period of subsequent remission and survival was about the same in the group treated for relapse by estrogen therapy as by castration. Often

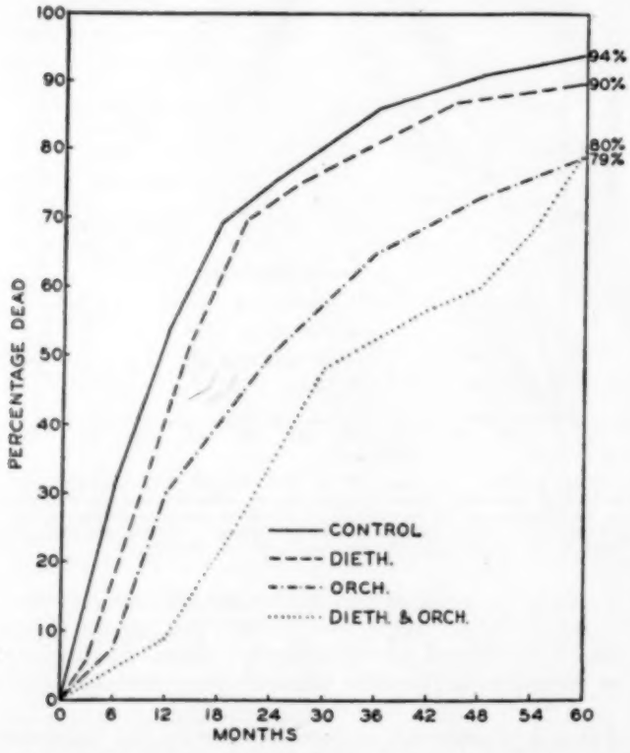

Chart 4.—Five year survival of 263 patients with prostatic cancer treated by castration and/or estrogen therapy who had metastases on first admission. A comparison of the three forms of therapy and a control series of 231 patients (Nesbit and Plumb[1]) showing the percentage dead at six month intervals after institution of therapy. The statistics on three year survival and on five year survival represent the results of follow-up studies on two separate groups of patients. The five year study is not a continuation of the three year results. For this reason the graphic presentations of the two series, although similar, do not necessarily parallel each other during the first 36 months of observation.

these benefits appear to be derived from the bed rest during hospitalization, increased nutrition with nursing care and the psychic value of surgical or other therapeutic efforts of the physician in behalf of the patient rather than from a true remission of the neoplasm. On the average, these patients survive only 9.6 months after the onset of their relapse.

There have been differences in opinion with regard to the most advantageous time for instituting therapy. Some physicians believe that treatment should begin as soon as the diagnosis of cancer is established, others that it should be withheld until symptoms from metastases develop. Those holding the latter view have been prompted by the suppositions that a neoplasm can be controlled only for a limited period of time whether therapy is given early or late and that economical use of this method is best effected when palliation is needed. The present study demonstrates that metastases affect survival adversely even when castration or estrogen therapy is employed and seems to indicate that androgen independence occurs more often early than late. It would seem logical, therefore, to treat all patients at the time of first diagnosis.

SUMMARY AND CONCLUSIONS

1. This study indicates the value of cooperative effort in the acquisition of data of statistical significance, where previously the handicaps of time and numbers had made the accumulation of such information an individual impossibility. This economy might well be applied to other fields of investigation in which, in the interest of accurate evaluation, the study of large numbers of patients is a necessity.

2. The present survey has demonstrated conclusively that patients with prostatic cancer who respond favorably to castration and/or estrogen therapy live more comfortably and longer than patients not treated by these methods. Patients who fail to show any response to treatment have survival rates that are identical to those of persons in the untreated control group.

3. Five year control of prostatic cancer is most effectively obtained by the combined employment of orchiectomy and diethylstilbestrol in patients who are free from metastases. When metastases are present orchiectomy is significantly more effective than diethylstilbestrol; the combination of diethylstilbestrol and orchiectomy does not appear to offer any advantage over orchiectomy alone in this group of patients.

4. The maximum benefit is best achieved by the institution of treatment as soon as the diagnosis is established.

5. There appears to be no advantage of one form of therapy over the other when used in the treatment of relapse. The symptomatic improvement that occurs in some instances might well be due to improved nutrition and nursing care rather than a remission of carcinogenic activity.

Patents, Commissions, Rebates and Secret Remedies.—An ethical physican will not receive remuneration from patents on or the sale of surgical instruments, appliances and medicines, nor profit from a copyright on methods or procedures. The receipt of remuneration from patents or copyrights tempts the owners thereof to retard or inhibit research or to restrict the benefits derivable therefrom to patients, the public or the medical profession. The acceptance of rebates on prescriptions or appliances, or of commissions from attendants who aid in the care of patients, is unethical. An ethical physician does not engage in barter or trade in the appliances, devices or remedies prescribed for patients, but limits the sources of his professional income to professional services rendered the patient. He should receive his remuneration for professional services rendered only in the amount of his fee specifically announced to his patient at the time the service is rendered or in the form of a subsequent statement, and he should not accept additional compensation secretly or openly, directly or indirectly, from any other source.

The prescription or dispensing by a physician of secret medicines or other secret remedial agents, of which he does not know the composition, or the manufacture or promotion of their use is unethical.

From the PRINCIPLES OF MEDICAL ETHICS of the American Medical Association.

Special Article

THE MEDICAL CARE OF THE VETERAN

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Birmingham, Ala.

The purpose of this paper is to present a historical summary of the Department of Medicine and Surgery of the Veterans Administration; to point out some of its past difficulties; to outline the program of medical care that is now being carried out for the veteran, with particular reference to the basic policies that prevail; to point out some of the problems that confront the Administration, and to describe the quality of medical care that is being provided for the American veteran.

HISTORY OF THE VETERANS ADMINISTRATION

In order to describe properly this important medical activity of the United States Government, it seems desirable to review the history and development of the Veterans Administration. Its history really began immediately after World War I. Shortly after the signing of the Armistice in 1918, the United States was confronted with the problem of offering a program of medical and hospital care for the veterans of that war, in addition to the veterans of preceding wars. In 1921 the President of the United States appointed a committee of prominent citizens to make a thorough investigation of the problem and report with recommendations to him as to what should be done to carry out this program. This committee included among its members such prominent American citizens as Charles G. Dawes, who later became Vice President of the United States, and Mr. Theodore Roosevelt. This group of citizens studied the problem with respect to the benefits that should be made available to the veterans and surveyed the existing facilities for governmental medical care. They found that three governmental agencies without a common authority had been created for and were engaged in executing the laws for the relief of the disabled. These agencies were the Bureau of War Risk Insurance, the Rehabilitation Division of the Federal Board for Vocational Education and the United States Public Health Service. Members of the committee emphasized the lack of hospital construction to provide facilities for the disabled veteran. They recommended that the Veterans' Service Administration be created and that the several functions heretofore allocated to the various governmental agencies be consolidated. They recommended further an immediate extension of government hospital facilities, together with the necessary mobilization of civilian medical services. The result of these findings was the passage of legislation establishing the United States Veterans' Bureau (Public Law 47, 67th Congress), and this was approved on Aug. 9, 1921.

† Dr. Kracke, died on June 27, 1950.

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Immediately prior to that time the United States Public Health Service had been operating sixty-two hospitals with a capacity of about 18,700 beds. In addition to this, there were contracts with many civilian institutions for further hospital services. On June 30, 1920 there were nearly 10,000 veterans with service-connected disabilities hospitalized in contract hospitals alone. On April 29, 1922 the President of the United States issued an Executive Order transferring all hospitals and dispensaries which were being administered by the U. S. Public Health Service for the care of World War I veterans to the Veterans' Bureau. Thus, after this transition and after some consolidation, on June 30, 1923 there were forty-six United States Veterans' Bureau hospitals in operation and the number of patients in contract hospitals had been drastically reduced.

On April 20, 1922, with the passage of Public Law 194, 67th Congress, the Director of the Veterans' Bureau was authorized to make hospital facilities available for veterans of the Spanish-American War, the Philippine Insurrection and the Boxer Rebellion—for the treatment of neuropsychiatric and tuberculous conditions. At that time the facilities appeared to be adequate for the care of veterans from the various wars who had service-connected disabilities, neuropsychiatric disorders and tuberculosis. However, on June 7, 1924, with the passage of Public Law 242, 68th Congress, the entitlements of veterans were considerably liberalized, inasmuch as the law provided that the director of the Veterans' Bureau was authorized to provide hospitalization and traveling expenses for any veteran of any war since 1897 who was not dishonorably discharged, regardless of the origin of his disability, whenever existing facilities were available and provided that preference to admission be given to those veterans financially unable to pay. This brought about the necessity for decided enlargement of hospital facilities to take care of the enormously increased load, and the Veterans' Bureau found it necessary to plan a program of hospital construction that would take care of the potential beneficiaries in a veteran population of approximately 5 million persons. This was followed by further appropriations for authorization for the expansion of the hospital construction program. In 1932 there were in operation fifty-six veterans' hospitals with a combined capacity of nearly 30,000 beds and ten veterans' homes of a domiciliary type with a combined capacity of about 20,000 beds.

On July 3, 1930, by the passage of Public Law 536, 71st Congress, the President was authorized to consolidate the Bureau of Pensions, the National Home for Disabled Volunteer Soldiers and the United States Veterans' Bureau into what is now known as the Veterans Administration.

In an economy wave in 1933 the Congress passed Public Law 2, 73d Congress, repealing all public laws granting medical care, hospitalization or domiciliary care to veterans who served in or subsequent to the Spanish-American War. However, in the same law the Administrator of Veterans' Affairs was authorized to furnish hospitalization to veterans of all wars for disabilities, regardless of service connection but subject to the number of beds available. Restrictions on hospitalization resulting from presidential regulations issued under Public Law 2 led to further legislation to remove the restrictions.

On Aug. 23, 1935 Public Law 312, 74th Congress, was approved. Liberalized eligibility for hospitalization provided that any veteran of any war who was not dishonorably discharged and who was in need of hospitalization and was unable to defray the necessary expenses thereof should be furnished hospitalization in any Veterans Administration facility within the limitation of beds existing in such facility, irrespective of whether disability, disease or defect was caused by military service. An important provision of the law was that the statement under oath of the applicant on such form as may be prescribed by the administrator of Veterans' Affairs would be accepted as sufficient evidence of inability to defray the necessary expenses. This law is essentially the same as that in effect today: the Veterans Administration accepts the oath of the veteran that he is unable to purchase medical and hospital care from his own resources. This is sometimes known as the "pauper's oath," which the average veteran interprets liberally and has no hesitation in signing.

The right of the veteran to receive medical care, regardless of service connection, on his own declaration of inability to pay has been and still is the cause of much criticism from the members of the medical profession, but it should be pointed out that the Veterans Administration is not authorized to investigate the validity of the veteran's statement. Since Congress appears unwilling to restrict this entitlement, the number of available beds remains the only limiting factor on the nonservice-connected cases.

At the expiration of the fiscal year 1934 there were 38,026 veterans receiving hospitalization from the Veterans Administration, of whom 14 per cent were hospitalized for tuberculosis, 56 per cent for nervous and mental diseases and 30 per cent for general medical and surgical conditions. It should be noted that the percentage of veterans receiving treatment for neuropsychiatric conditions was essentially the same as it is today.

HOSPITAL CONSTRUCTION AND REQUIREMENTS

In 1941, just before the outbreak of World War II, Congress had specifically authorized and appropriated $165,500,000 for new hospital, domiciliary and dispensary facilities. Altogether nearly $209 million had been made available for construction purposes during the period of 1919 through the fiscal year 1941. At the same time, the Veterans Administration was operating hospitals in ninety-one locations in forty-five states and the District of Columbia, with a total of nearly 62,000 beds, in addition to 20,000 beds for domiciliary care. Therefore at the beginning of World War II it was operating 80,596 hospital and domiciliary beds. Today it is operating only about 106,000 beds although the potential veteran load has been increased from about 5 million to nearly 20 million veterans. At that time the Veterans Administration had undertaken a ten year construction program which had as its goal approximately 100,000 beds. Had not World War II broken out then, that goal would probably have been reached by 1949 or 1950.

It was during 1943 that the impact of new veterans from World War II was felt in the hospital field. Thus, of the 57,000 hospitalized patients on June 30 of that year, 45,000 were veterans of World War I and over 5,000 were veterans of World War II; the remainder were veterans of other wars and peacetime service. In that same year the 78th Congress passed Public Law 10, which amended the regulations so as to grant hospitalization to World War II veterans on the same basis as granted to those of World War I: Congress granted a potential load of nearly 20 million veterans the same entitlements as those previously granted to 5 million, and these entitlements included the right of medical care and hospitalization if the veteran was financially unable to pay for it, as stated by his own declaration.

On May 7, 1943 the Executive Office of the President reestablished the Federal Board of Hospitalization, which was charged with the duties of analyzing all hospital construction by any department of the government. No project for additional hospital beds, or no new construction or major alteration could be undertaken by any department of the government until it had been reviewed by that Board and the recommendation of the Board had been transmitted to and approved by the President of the United States. The Board was abolished on June 30, 1948. This same function now is exercised by the Bureau of the Budget.

As World War II came into its final years, the Veterans Administration was confronted with constantly increasing problems in providing medical and hospital care to those men being discharged from service. Arrangements were made with the Army and Navy whereby many of their officers might be put on temporary duty with the Veterans Administration. The allocation of about 1,700 medical officers relieved the situation somewhat but was considered and known to be only a temporary measure. The discharge of increasing numbers of men from military service in the latter phase of World War II caused a general slowing up of medical and hospital care in the Veterans Administration not only because of overtaxing of physical facilities and the necessity of borrowing facilities from the Army and Navy but also because of the unavailability of personnel, who were heavily engaged in the war effort. Therefore, on June 22, 1944 the Servicemen's Readjustment Act was passed, which labeled the Veterans Administration as an essential war agency and gave it priority, second only to the War and Navy Departments, in securing personnel and equipment to care for disabled veterans. The administrator of Veterans' Affairs was authorized and directed to expedite and complete the construction of additional hospital facilities for war veterans and to enter into agreements and contracts for the use or transfer of Army and Navy hospitals for the use of veterans when they became surplus to the needs of the military services. Also, $500 million was appropriated for the construction of additional hospital facilities.

After this, in September 1944 the Veterans Administration in collaboration with the Federal Board of Hospitalization prepared an estimate of bed requirements up to June 30, 1947 and announced a program for 22,000 beds to be acquired by new construction or by transfer from the Army and Navy. At that time it was estimated that 300,000 beds would be needed for the hospitalization and care of veterans in the year 1975.

As early as 1941 the American Legion, having become concerned with the problem of giving good medical care to the veterans, at their Milwaukee Convention urged a reorganization of the Veterans Administration and passed their famous Resolution 528, which was highly critical of the prevailing policies of the Veterans Administration. They strongly reiterated this in 1945. They recommended that an outstanding member of the medical profession head the Department of Medicine and Surgery, that the Department be reorganized and

enlarged and, in short, that a new medical director be appointed. In the meantime the demands made on the Department of Medicine and Surgery had reached such proportions that the existing personnel and facilities, even with the aid of men borrowed from the Army and Navy, were not able to do the job properly. This resulted in widespread general dissatisfaction throughout the country, so that the cry for reorganization became more acute than ever. In the resultant reorganization Gen. Omar N. Bradley was appointed administrator of Veterans' Affairs to succeed Brig. Gen. Frank T. Hines, who was then made ambassador to Panama.

THE DEPARTMENT OF MEDICINE AND SURGERY SINCE WORLD WAR II

General Bradley assumed his duties on Aug. 15, 1945. Prior to that time, while he was still in Europe directing military affairs, he had accepted the post of administrator; while he was still in Germany he called to his headquarters Major General Paul R. Hawley, chief surgeon in the European Theater, and asked him if he would accept the post of medical director. General Hawley in a conference with General Bradley in Weisbaden, Germany, at which Brig. Gen. Elliott C. Cutler was also present, discussed in detail what new plans might be laid that would give a high type of medical care to the potential load of nearly 20,000,000 veterans from all of the wars. At that conference plans were laid for affiliation of a great system of veterans' hospitals with the medical educational forces of the United States. Also, a similar proposal had been made some time before by Dr. Paul B. Magnuson, who at that time was professor of orthopedic surgery at Northwestern University Medical School. This proposal had been made to the former administrator of Veterans' Affairs, General Hines, but had been rejected. Thus, the idea was born that the backbone of quality of medical care offered to the veteran in the future would be dependent to a large degree on affiliation with teaching hospitals and teaching institutions. General Hawley then accepted the position as chief medical director and gathered around him some of the most prominent figures in American medicine for advice and counsel. Chief among these was Gen. Elliott C. Cutler, Moseley professor of surgery at Harvard Medical School. Until his death in August 1947 General Cutler gave lavishly of his limited time, spending many days in planning and directing the newly established professional services.

The first step in reorganization was to approach American medicine through the Board of Trustees of the American Medical Association and to enlist the support of American medicine in this program of medical care. The plan for affiliation with medical educational forces envisaged the construction of new hospital facilities near the medical schools of the United States and the utilization of the faculties to aid in the programs of medical care and education. In such institutions the responsibility for hospital operations would be that of the Veterans Administration and the responsibility for the quality of the medical care would be accepted to a large degree by the medical schools. That this program has developed with a large degree of success will be shown later in this paper.

In addition, the program would develop a situation whereby the Veterans Administration would enlist as many high caliber medical practitioners as possible on full time duty. The professional services of the medical colleges have been utilized by the appointment of consultants for actual service in the program of medical care. These consultants supervise the professional work, carry on the teaching program and make their services available in any other way deemed necessary by the full time members of the staff. There has been appointed a large group of attending physicians and surgeons who, in general, are younger men but who do active service on the medical and surgical wards with residents working full time under their direction. Each affiliated veterans' hospital under this plan is operated by what is known as the Deans Committee, and today such institutions are referred to as "Deans Committee hospitals." In these situations all consultants and attending men are recommended for appointment by the Deans Committee and the appointments made by the Veterans Administration. Thus, there has been developed a tremendous group of part time, high grade medical talent throughout the United States in the capacity of consultants and attending men, whose appointments have been recommended in every instance by Deans Committees of the various medical schools and who are utilized in addition to the gradually enlarging, full time staffs in the various installations.

In order to carry out the foregoing plan it was necessary that all professional personnel be removed from the restrictions of Civil Service. This resulted in the passage by the 79th Congress of Public Law 293, which removed physicians, dentists and nurses from the requirements of Civil Service. Unfortunately, however, it did not remove from Civil Service other auxiliary personnel, such as clinical psychologists, dietitians, physical and occupational therapists, social workers and laboratory and x-ray technicians of various types. After the passage of this law the procurement of physicians, dentists and nurses rose sharply. Many of the new recruits were clearly superior in their professional attainments. One reform that is still needed is the removal of all other auxiliary personnel from the restrictions of Civil Service.

As stated by Dr. Paul B. Magnuson, now the chief medical director, the objectives of the new program include the following:

1. To attract and retain adequate full time personnel by offering opportunities for professional growth and development and providing salaries commensurate with ability.

2. To secure the services of outstanding medical men to serve as teachers, consultants and attending physicians.

3. To inaugurate a residency training program, by means of which Grade A medical schools would participate in the treatment of patients and the training of the full time staff, and by means of which the critical shortage of medical specialists could be partially overcome.

4. To build new hospitals in urban centers in close proximity to medical schools and medical talent and to attempt to make every VA hospital a teaching hospital.

5. To insure that professional personnel are relieved so far as possible from all nonessential administrative duties and are free to devote their full time and attention to the care and treatment of patients.

6. To develop a research program which would improve therapeutic procedures, provide training materials and make the Department of Medicine and Surgery a professional alert and progressive medical organization.

The program as outlined has been one of astonishing success. Thus, at this time the Veterans Administration has about twice as many full time physicians, about four and one-half times as many dentists, more than three times as many nurses and seven times as many social workers as it had in 1945. Currently all the full time physicians and dentists are civilian employees of

the Veterans Administration. In 1945 large numbers were military officers on detail. Success in the implementation of this program has come about for a variety of reasons: first, the high caliber and professional attainments of the persons who were recruited in the beginning to serve in the Washington Central Office to direct the program; second, the desire on the part of the American people and members of the American medical profession to properly reward the men who served in the various wars and to give them high quality medical care; third, a general dissatisfaction over prevailing policies prior to the reorganization; fourth, the removal of professional personnel from Civil Service, the increase in emoluments for full time personnel and the opportunities for professional advancement and for work in a professional medical atmosphere; fifth, the sudden release of substantial numbers of professional persons from military service at the conclusion of World War II, enabling the Veterans Administration to secure the services of a considerable number of high caliber medical personnel at that time, and, sixth, the wholehearted cooperation of the medical educational faculties throughout the country.

TABLE 1.—*Hospitals Recommended for Cancellation by President*

Location	Size (No. Beds)	Type*	
Americus, Ga.	250	TB	
Charlotte, N. C.	500	GM	
Chattanooga, Tenn.	500	GM	
Columbia, S. C.	200	GM	(addition)
Decatur, Ill.	250	GM	
Detroit	500	TB	
Duluth, Minn.	200	GM	
El Paso, Texas	500	NP	
Gainesville, Fla.	1,000	NP	
Grand Rapids, Mich.	200	GM	
Greenville, S. C.	200	GM	
Harrisburg, Pa.	200	GM	
Houston, Texas	1,000	NP	
Klamath Falls, Ore.	200	GM	
Memphis, Tenn.	1,000	NP	
Mound Bayou, Miss.	200	GM	
New York	1,000	GM	(chr.)
Norman, Okla.	750	NP	
Salisbury, N. C.	921	NP	
San Diego, Calif.	200	GM	
Tallahassee, Fla.	100	GM	
Thomasville, Ga.	100	GM	
Toledo, Ohio	1,000	NP	
Tupelo, Miss.	200	GM	

* GM denotes general medicine and surgery; TB, tuberculosis; NP, neuropsychiatric, and chr., chronic.

THE HOSPITAL CONSTRUCTION PROGRAM

After the appointment of General Bradley as administrator in August 1945, it became necessary to greatly enlarge the hosptal construction program, which actually already was in effect as a ten year program before he assumed his office. The new administrator made certain changes and revisions so that it became the 1947 Hospital Construction Program.

In the meantime the American Legion Medical Advisory Board recommended a proposed policy with reference to the location of veterans' hospitals. They concurred in the plan that hospitals should be located in urban centers close to the medical schools and the medical centers and in other areas where ample medical talent was available. A resolution presented by Dr. Leonard G. Rountree, chairman of the National Medical Advisory Board of the American Legion, adopted March 3, 1947, stated:

> The quality of the medical service we afford our veterans will be determined by the location of our VA hospitals. We should have only one policy—let us locate our hospitals in or near medical schools and medical centers else we miss the best.

At the same time, the policy further stated that this should in no way adversely affect the establishment of smaller hospitals in well located communities where less specialized hospital care could be provided. There was developed then in 1947 and 1948 a hospital construction program along the lines already indicated, so that on Dec. 1, 1948, although only two new hospitals actually had been constructed, eighty-nine hospitals were in various stages of progress (thirty-one being actually under construction, with the rest in various stages of planning).

TABLE 2.—*Hospitals Now Being Constructed or in a Stage of Planning by the Veterans Administration*

Location	Size (No. Beds)	Type*
Albany, N. Y.	1,005	GM
Altoona, Pa.	200	GM
Ann Arbor, Mich.	500	GM
Atlanta, Ga.	500	GM
Baltimore	300	TB
Beckley, W. Va.	200	GM
Big Spring, Texas	250	GM
Birmingham, Ala.	500	GM
Bonham, Texas	350	GM, 50 DOM, 300
Boston	1,000	GM
Brockton, Mass.	1,000	NP
Chicago	500 (tumor)	GM
Chicago	500	GM
Cincinnati	500	GM
Clarksburg, W. Va.	200	GM
Cleveland	500	GM
Cleveland	1,000	NP
Denver	500	GM
Durham, N. C.	500	GM
Erie, Pa.	200	GM
Fort Wayne, Ind.	200	GM
Fresno, Calif.	250	GM
Grand Island, Neb.	200	GM
Indianapolis	494	GM
Iowa City	500	GM
Iron Mountain, Mich.	250	GM
Kansas City, Mo.	500	GM
Little Rock, Ark.	500	GM
Los Angeles	1,000	NP
Louisville, Ky.	500	GM
Madison, Wis.	500	TB
Manchester, N. H.	150	GM
Marlin, Texas	200	GM
Miles City, Mont.	100	GM
Minot, N. D.	162	GM
East Orange, N. J.	1,000	GM
New Orleans	500	GM
New York	1,250	GM
Salisbury, N. C.	1,000	NP
Oklahoma City	500	GM
Omaha, Neb.	500	GM
Peekskill, N. Y.	1,965	NP
Philadelphia	500	GM
Phoenix, Ariz.	200	GM
Pittsburgh	1,000	NP
Pittsburgh	750	GM
Poplar Bluff, Mo.	200	GM
Saginaw, Mich.	200	GM
St. Louis	500	GM
Salt Lake City	500	NP
San Francisco	1,000	NP
Seattle	300	GM
Shreveport, La.	450	GM
Spokane, Wash.	200	GM
Syracuse, N. Y.	500	GM
Topeka, Kan.	(1,000 NP, funds for site only)	
Washington, D. C.	500	GM
West Haven, Conn.	400	TB
West Haven, Conn.	500	GM
Wilkes-Barre, Pa.	475	GM
Wilmington, Del.	300	GM

* GM denotes general medicine and surgery; TB, tuberculosis; DOM, domiciliary, and NP, neuropsychiatric.

On Jan. 10, 1949 the President of the United States ordered twenty-four of these projects canceled and the size of fourteen others reduced, involving what is now known as "the presidential cutback of 16,221 beds" (table 1), with the balance of the hospitals remaining under construction (table 2). Most of the cancellations from the building program of specific hospitals were made with the approval of the Veterans Administration, and they were eliminated primarily because of their location in relatively remote or inaccessible areas where medical talent may not be available for proper staffing

and where there would have been great difficulty in securing full time staff members.

The projects remaining, including forty-three hospitals under construction and seventeen in various stages of planning, are designed to produce some 38,000 beds. The addition of 38,000 beds to the existing 106,000 beds in current operation would give about 144,000 beds on completion of this building program. Closing of temporary hospitals and beds as new construction is completed will leave a net total of 131,500 beds in operation.

On Jan. 31, 1950 the Veterans Administration was operating the following number of beds: general medical and surgical, 37,436; neuropsychiatric, 54,589; tuberculosis, 14,187, and domiciliary, 17,946, a total of 124,158.

HOW MANY HOSPITAL BEDS SHOULD THE VETERANS ADMINISTRATION OPERATE?

There is no simple answer to the important question, how many hospital beds should the Veterans Administration operate? Indeed, this has been a subject of constant and continued discussion among the advisors of the Veterans Administration, in the Central Office, in the Bureau of the Budget, in the Congressional halls, among the various service organizations and among medical organizations in general throughout the country. It is always an important topic of discussion at meetings of the Special Medical Advisory Group. It can be stated that, in general, the ex-servicemen's organizations always present powerful arguments for increasing the number of beds. Such organizations as the American Hospital Association, and perhaps also the American Medical Association, have looked with anxiety on additional bed construction in the veterans' hospitals.

Many projections with respect to bed requirements in the future have been made from time to time, but the number of beds that will be operated by the Veterans Administration in the future will depend basically on the wishes of the American people, as indicated through their representatives in the National Congress. Furthermore, projection of estimates of hospital beds for the future cannot be made with any degree of certainty, because it is impossible to predict the many variable factors that enter into bed requirements at any given time. In general, the number of beds that will be required by the Veterans Administration will depend on the number of veterans who seek medical service, on the entitlements conferred on veterans by Congress and on the efficiency with which the beds are operated. For example, the average veterans' hospital bed today does approximately one and one-half times as much work as it did ten years ago.

Certain predictions can be made with a fair degree of accuracy. First, the total civilian population of the United States is approximately 150 million. The total number of living veterans who are potential users of the medical service of the Veterans Administration is approximately 20 million, or about one eighth of the entire population of this country. One of the most reliable estimated projections of the veterans' hospital load is that prepared in Central Office, and the projection is based on the assumption that the same entitlements will prevail in the future as prevail at present. Today the Veterans Administration operates 106,000 hospital beds, and the newly authorized construction program will produce a total bed capacity with elimination of temporary beds up to about 131,500 beds. If one presumes that these 131,500 beds are activated within the next two years, two major questions arise: How many beds can the economy of this country afford to support? How many beds can be properly staffed with competent medical personnel in order to maintain a high type of medical service?

On Oct. 31, 1949 a total of 125,904 persons were receiving care from the Veterans Administration in 109,028 hospital beds and 16,876 beds in domiciliary homes as well as in other government and contract hospitals. Of this group of patients, over 38,000 were being treated for service-connected disabilities and 86,000 for nonservice-connected disabilities. Thus, patients with nonservice-connected disabilities are found in a ratio of two to one over the service-connected group. In the hospitalized group of 97,000 patients in the veterans' hospitals, exclusive of domiciliary homes, about 46,000 patients were psychiatric problems, over 7,000 were other neurologic problems, nearly 13,000 were tuberculous and approximately 32,000 were general medical and surgical problems. It is necessary, of course, that three different types of hospitals be operated to care for these three major groups. In the entire hospital program of over 106,000 beds, over 37,000 today are allocated for general medical and surgical purposes, about 55,000 for neuropsychiatric (including some neurologic) problems and over 14,000 for tuberculous patients.

In a consideration of projected needs for the future, it must be remembered that the tuberculous veteran will probably always receive medical and hospital care at the expense of the government, regardless of service connection, and this is also true of the neuropsychiatric patient. The main issue on projected beds in the future therefore resolves itself around the number of beds to be occupied by general medical and surgical patients. We believe the philosophy of the American people is such that it will always be considered right and proper to offer free medical and hospital service to tuberculous and psychiatric patients in the veterans group regardless of service connection. This fundamental principle has long been accepted by the various states and communities throughout the nation with respect to the nonveteran population. Therefore, the number of projected beds for the future would depend to a large extent on the number of anticipated psychiatric and tuberculous patients. In this important connection the Division of Psychiatry and Neurology of the Veterans Administration, under the direction of Dr. Harvey J. Tompkins, has estimated that the peak neuropsychiatric hospital load expected in 1965 will be 118,600 and the anticipated load in 1975 about 112,000. A fundamental fact of great importance that must be faced is that of a potential veteran population of about 14,000,000 in 1975 we may expect about 112,000 to be neuropsychiatric patients requiring perhaps long time hospitalization. One can state with considerable certainty that the American people will require and demand that these patients be treated and hospitalized by the Veterans Administration. The same situation, however, does not prevail in the field of tuberculosis. It is expected that the hospital load of the tuberculous group of patients will increase to a peak in about five years and decline slowly thereafter to about 10,000 in 1975.

A question of considerable importance, and one over which the most controversy develops, is the number of beds that will be required for general medical and

surgical purposes in the future. As stated before, about 37,000 beds are now being utilized in veterans' hospitals for these purposes, and it has been estimated that a total of 130,000 beds will be needed in 1975. Table 3 summarizes the bed situation not only for the present but in the future.

As stated before, the total number of beds required in 1975 will depend to a large degree on the number of long term neuropsychiatric problems. A fairly safe and conservative estimate would be that twenty-five years from now a total of some 260,000 beds will be required by veterans. Indeed, if there is no restriction of hospitalization of the group of veterans with nonservice-connected disabilities and if the entitlements should be liberalized in any way this may run well in excess of 300,000 beds.

Since considerable opposition has developed to the building program of the Veterans Administration, particularly by certain groups such as the American Hospital Association, it might be well to contrast the present situation with that existing a few years ago before the beginning of World War II. As pointed out before, at the beginning of World War II there had been planned a ten year construction program estimated to produce 100,000 beds at a time when the potentially

TABLE 3.—*Veterans Administration Hospital Facilities*

	Beds as of Jan. 31, 1950
No. of hospital beds in operation	106,212
Beds under construction	19,000
Beds planned but not now under construction	19,000
Total beds planned under present program	144,212
Projected Beds in 1975	
Neuropsychiatric problems	118,000
Tuberculosis problems	12,000
General medical and surgical problems	130,000
Total beds in 1975	260,000

eligible veteran population numbered less than 5,000,000 persons. The bed ratio under that plan would have been approximately one bed per 40 veterans. To contrast the situation today, with an authorized bed program of 131,500 beds and about 20,000,000 veterans, this means that there will exist approximately one bed per 150 veterans. To compare this situation with that in the country at large, there are approximately 1,400,000 beds of all classifications, which is approximately one bed per 110 persons. It can be stated, therefore, that the number of projected beds available to the potential veteran load is less than the number of beds available to the civilian population at large.

As stated before, it should be emphasized that the number of beds and extent of medical service provided to veterans are matters decided, in the final analysis, by Congress. In the passage of laws conferring benefits on the veteran, Congress has stated that veterans not dishonorably discharged, with nonservice-connected disabilities may have medical and hospital care under two conditions, namely, inability to pay for the services and availability of beds. Obviously, the more beds are constructed the more will be available. The principal limiting factor that can be imposed, therefore, on increased benefits would appear to be limitation in construction of new beds. It has been suggested by one group that Veterans Administration hospital beds should be available only to service-connected cases and that nonservice-connected conditions be given medical care in civilian hospitals. This would be unwise, because it would open the floodgates for free medical care to many times more veterans than the number who now receive it.

It should be pointed out that any construction program increasing the number of veterans' beds is, by necessity, dependent on the number of medical and other professional personnel available to man the institutions. Indeed, the construction program has been retarded by that deficiency. The Special Medical Advisory Council has recommended on several occasions that the total bed capacity in the present program be limited to 120,000 beds, and this decision was based on the difficulty in securing competent personnel for the institutions. In other words, it was properly decided that there should be no sacrifice in the quality of medical care being offered to the veteran today.

When the many factors influencing the number of hospital beds of the future are considered, it is impossible for anyone to project these needs with any degree of accuracy. The needs will vary, undoubtedly, through the years to come, being dependent on many factors, some of which have been outlined previously. Furthermore, in the new and modern era of atom splitting, nobody can predict at what moment the entire veterans' hospital system might be called into service to render aid to the victims of atomic warfare.

THE LOCATION AND COST OF VETERANS' HOSPITALS

Veterans' hospitals should be located in those areas of the country where the staffing of the institutions will present the least difficulty. Therefore it is necessary that the institutions be located in urban areas where there are large concentrations of physicians and other medical personnel. One of the great mistakes of the Veterans Administration in the past has been the location of institutions in more or less remote areas. This resulted in staffing difficulties to the point where there was serious disintegration in the program of medical care.

Many of the hospitals are being built as teaching hospitals, around medical schools wherever possible, and nearly every medical school in the United States is directly or indirectly concerned in the medical care of the veteran. Great pressures are always brought on the Veterans Administration to place hospitals in undesirable locations. For the most part these pressures have been successfully resisted, although there are rare instances, particularly in the previously established ten year building program, in which an institution has been erected in an undesirable location. The President of the United States, in his 16,000 bed cutback of January 1949, prevented the erection of a number of such institutions by eliminating small veterans' hospitals in smaller towns and communities where it was well known that the institutions, by necessity, would deteriorate to a stage of mediocrity and where the medical care of the veteran would be less than first class. Furthermore, it is well known that the erection of hospitals of fewer than a certain number of beds is not conducive to efficient operation. Therefore the Veterans Administration has adopted a general policy of building hospitals a certain size: general medical and surgical hospitals, 500 to 1,000 beds; neuropsychiatry hospitals, 500 to 1,100 beds; tuberculosis hospitals, 350 to 500 beds, and domiciliary homes, 500 to 2,000 beds.

The modern veterans' hospital is constructed along modern and efficient lines. Hospital construction experts have been and continue to be utilized freely in the building of these institutions. A great many of the hospitals are planned and supervised during construction by the Army Engineers. Others are being planned and built by the Veterans Administration. Bids are always let on a highly competitive basis. The modern veterans' hospital has within it all physical facilities for the efficient and scientific care of the sick. On the whole these facilities are usually considerably superior to those found in the average nonveteran hospital. The construction costs are practically the same as those for nonveteran hospitals. For example, at Birmingham, Ala., the 487 bed veterans' hospital is being constructed for approximately $12,000 per bed. Contrary to some reports, construction costs are not excessive except in the rare instance when a small veterans' hospital is built in a remote location.

COSTS OF HOSPITAL AND MEDICAL CARE

In June 1949 there were 185,944 full time and 9,544 part time personnel in the entire Veterans Administration, a total of over 195,000 persons. About 114,000 were employees of the Department of Medicine and Surgery. From the standpoint of manpower, therefore, this department is the largest single activity of the Veterans Administration. The same is true with respect to total funds expended for salaries. For the fiscal year 1950 the total Veterans Administration funds appropriated for all purposes were over $5,625,000,000, and the total fund available for salaries and expenses in the operation of the Veterans Administration was $870,000,000, of which over $582,000,000 was available to the Department of Medicine and Surgery. This department therefore is the largest operating unit of the entire Veterans Administration.

In the veterans' hospitals there is an average of 0.999 employee per patient, this ranging from 0.662 employee per patient in the neuropsychiatry hospitals to 1.225 employees per patient in the tuberculosis hospitals and 1.341 employees per patient in the general medical and surgical hospitals. This compares favorably with similar figures in nonveteran institutions throughout the country. With respect to hospital per diem costs, the average patient day cost in 1949 was $6.58 in the neuropsychiatry hospitals, $12.72 in the tuberculosis hospitals and $14.22 in the general medical and surgical hospitals.

One of the most reliable indications of the efficiency of any hospital is the length of patient stay. In this important respect the record of the veterans' hospitals has been particularly outstanding in recent years. In the fiscal year 1945 the average general medical and surgical patient was hospitalized thirty-seven days and in the fiscal year 1949 about twenty-nine days. Another example illustrating the same principle is the fact that in the veterans' hospital at Hines, Ill., the surgical operations performed during 1941 numbered only about 430 per month as contrasted to over 1,000 per month in 1949. It is certainly true that the over-all efficiency of the Veterans Administration hospitals has been immeasurably increased in recent years so that each hospital unit or each hospital bed appears to be performing about one and one-half times as much work, or servicing about one and one-half times as many patients, as it did a few years ago. It should be pointed out that increased efficiency in any hospital is always accompanied with increased costs of operation.

The per diem costs for full time physicians and all outside consultants are shown in table 4.

It costs $1.74 per patient day for all professional services of both full time physicians and consultants for the veteran in the general medical and surgical hospital. When the cost is compared with that for professional care for the nonveteran patient attended by the average practicing physician, it is remarkably low. It can be seen, therefore, that payment for professional services for the care of the veteran is extremely low and astonishingly so when the high type of medical service is considered. It would appear that the government gets a real bargain in this respect.

PERSONNEL PROBLEMS

Of the 118,000 full time employees of the Department of Medicine and Surgery on Jan. 31, 1950 a relatively small number are in the professional group. Thus, in the Veterans Administration system there are about 4,000 full time physicians, about 3,500 consulting and attending physicians on a part time basis and about 2,500 residents—a total of nearly 10,000 physicians who actively participate in the care of the veteran. In addition, there are nearly 1,000 dentists on a full time basis and approximately 13,700 graduate registered nurses. Thus there is a total of approximately 25,000 professional persons in the medical, dental and nursing groups who actively participate in the care of the veteran. The recruitment of this highly skilled personnel has been astonishingly successful. Several factors are responsible for this, but the chief ones are: an opportunity to render service in an atmosphere of high professional standards; freedom from the restrictions of Civil Service; a compensation scale that is considerably above that existing a few years ago, and, last and perhaps most important, relative freedom from political interference or dictation and freedom from unnecessary burdensome nonmedical detailed work.

TABLE 4.—*Per Diem Costs in Veterans Administration Hospitals*

Type of Hospital	Physicians	Consultants
General medical and surgical	$1.45	$0.29
Neuropsychiatry	.34	.04
Tuberculosis	.83	.14

Criticism has occasionally been directed at the Veterans Administration for its utilization of so much of the country's professional manpower at a time when shortages are prevalent. It would appear that the use of 4,000 full time physicians and 1,000 full time dentists from the 200,000 physicians and 80,000 dentists in this country should cause no serious concern. It is true that the use of 13,700 nurses produces a sizable deficiency in the civilian nursing group, but it is not excessive because the veteran group comprises about 13 per cent of the entire population and the veterans' nursing group only about 5 per cent of the entire active nursing personnel of the country.

With respect to compensation to the professional personnel of the Veterans Administration, as amended by Public Law 349, 81st Congress, full time physicians in the chief grade receive up to $11,000 yearly, with similar figures in the Dental Service. In the Nursing Service graduate nurses begin at a minimum of $3,400

per year, moving on up through the various grades to a maximum of $7,400. The passage of this legislation, which, in general, is a pay increase for all professional personnel in the entire Department of Medicine and Surgery, resulted again in an increased stimulus in recruitment in 1949.

Recruitment of nurses has been satisfactory and few vacancies exist. The same is true in the field of dentistry. However, the Veterans Administration needs more than 700 additional specialists to bring it up to full strength. As is to be expected, there are serious shortages in certain categories of specialists, these being notably: anesthesiology, radiology, pathology, orthopedic surgery and psychiatry. The Veterans Administration, however, is training its own personnel in the field of psychiatry. This will be discussed later in this paper.

SPECIALIZED ACTIVITIES

In addition to the operation of this large system of high grade hospitals in nearly every state of the Union, the Veterans Administration conducts a number of other medical activities designed to give all eligible veterans the best possible medical care in accordance with the highest professional standards. Thus, it conducts a tremendous outpatient medical program in its various hospitals and regional office clinics. The number of patients given outpatient medical examination and treatment by staff and fee-designate physicians in each of the fiscal years 1947, 1948 and 1949 was more than five times greater than the number during the fiscal year 1945. Also, an extensive program in dental care was conducted. During the fiscal year 1945, dental examination and treatment cases completed by staff and fee-designate dentists totaled approximately 106,000, compared with 818,000 in the fiscal year 1947 and more than a million in each of the fiscal years 1948 and 1949.

The Veterans Administration has concentrated in special centers the necessary qualified personnel and equipment to give optimum service in the highly specialized branches of medicine such as neurosurgery, paraplegia, plastic surgery, lung surgery, epilepsy, aphasia, mental hygiene and physical medicine rehabilitation. It operates special centers for paraplegic persons alone. Over sixty mental hygiene clinics for veterans have been established, and an equal number serves the veterans on a contract basis, with patients seen by teams consisting of a psychiatrist, clinical psychologist and a social worker in an effort to reduce, if possible, the hospital load of psychiatric cases by preventive measures.

The program in the treatment of tuberculous patients has been outstanding, and the research program in the use of streptomycin has been a noteworthy accomplishment unsurpassed the world over. The Veterans Administration conducts a tuberculosis case register of those discharged from the Armed Services with a diagnosis of tuberculosis and exerts constant efforts to keep them under medical supervision. It conducts an extensive program for 400,000 veterans with syphilis who have had partial or complete treatment while in the Armed Forces, and it keeps in touch with 200,000 such veterans with the cooperation of local health authorities throughout the country.

Its program in the development of prosthetic appliances has been outstanding, and a system has been devised whereby a veteran may secure artificial prosthetic devices or repair services in any part of the country with a minimum of inconvenience and delay. It also conducts a vast program of home medical care, in which the veteran is entitled to consult the physician of his choice in his own home town if he needs treatment for service-connected disability. It has also developed a similar program in the field of dentistry, whereby the veteran may consult his own dentist and receive dental care for service-connected dental problems.

The vast outpatient service acts, of course, as the great screening ground for the evaluation of disability and for the admission of patients to the far-flung hospital system of the Veterans Administration. It also serves as a great screening device to prevent the hospitalization of the veteran and treat him on an outpatient basis when possible, thus at the same time rendering incalculable service in the general field of preventive medicine.

In its residency program the Veterans Administration is training as many physicians in psychiatry as all other organizations in the country combined. It has about 50 per cent of all postgraduate students in clinical psychology under the sponsorship of forty-two affiliated universities. It also conducts fifty-five research units in the field of clinical research for the evaluation of streptomycin. Nearly 15,000 patients have been treated in this program with spectacular results. The Veterans Administration operates also three tropical disease clinics for the special study of that particular group of diseases. Another field in which the agency is extremely progressive is in hospital administration. It sponsors a Hospital Managers' Institute, which meets periodically to discuss problems in this field.

EDUCATIONAL AND RESEARCH PROGRAM

One of the basic reasons for the high type of medical care offered in the installations of the Veterans Administration is its vast educational and research program. There are approximately 2,500 residents in postgraduate training in approximately seventy-two hospitals, these residencies incorporating nearly every field of medicine and surgery except pediatrics, obstetrics and gynecology. The Deans Committee hospitals usually have strong residency programs. The impact on postgraduate medical education can be appreciated when it is realized that there are about 15,000 approved residencies in the United States, with the Veterans Administration conducting about 17 per cent of these. About half of the approved residencies in the United States in the field of psychiatry are in the Veterans Administration. Frequently the residents are permitted to leave for detached service in other affiliated institutions in order to have a well-rounded training.

In addition to residencies, the Veterans Administration has developed an approved internship at twelve of its hospitals. These internships for the most part are in straight medicine or straight surgery but are occasionally rotating. All intern programs are under the supervision of various Deans Committees. The intern and residency programs have been put into effect not only because of the high type of service offered the trainees but also because of their great value in the problems of patient care. Furthermore, the residency group offers an excellent potential source of future medical officers for the agency. In effect, therefore, the veterans' hospitals in which such programs are conducted are teaching institutions in every sense of the word.

Teaching and educational programs go on constantly in the average veterans' hospital. There are frequent conferences and seminars, staff meetings and group ward rounds. Formal educational programs are in effect in most institutions, with visiting faculty and consultants spending variable amounts of time in ward rounds, consultation on difficult cases, operative procedures and the conduct of numerous seminars and lectures. In addition to this important visiting group there is a well established system of consultation service stemming from the Area Offices. Each professional division in the veterans' hospital is visited at periodic intervals by area consultants who confer with members of the staff on the operative and professional problems of the hospital. It has an excellent system of referral of surgical specimens to consultants in pathology, with ultimate referral of difficult problems to the Armed Forces Institute of Pathology in Washington, D. C. Thus there has been developed a system whereby the full time physicians of the Veterans Administration have opportunity to consult large groups of their professional colleagues and to utilize the facilities of many consulting agencies.

The educational process also goes on constantly in the field of nursing. About 2,500 of its 13,700 nurses, all of whom are graduates, have either a Bachelor's degree or Master's degree. Groups of nurses are constantly on detached duty in affiliated institutions for special and advanced courses in the field of nursing. The Veterans Administration does not operate training schools for nurses.

A large number of the physicians employed full time in the Veterans Administration are certified as specialists by their respective boards; for example, in the Division of Psychiatry alone there are 342 men certified as specialists by the American Board of Psychiatry and Neurology.

Always a reliable indication of the efficiency of any hospital is its autopsy percentage. In June 1946 the average autopsy percentage in the entire Veterans Administration hospital system was 25.7. The percentage of autopsies now obtained in veterans' hospitals is 67.3, and over forty hospitals accomplish over 75 per cent. An excellent example of the splendid educational work in this field is the autopsy record at the Veterans' hospital in Biloxi, Miss. This has been raised from an extremely low point to about 100 per cent at present. It is generally agreed that this important feature of hospital activity is one of the strongest parts of good medical care. It is interesting that the Rehabilitation Committee of the American Legion has strongly endorsed and commended the efforts to secure more autopsies.

Research activities are constantly encouraged in the agency's hospitals, and about $4,270,000 was expended for that purpose during the fiscal year 1949, one half of which was spent for research in veterans' facilities and the other half allocated in contracts. In some hospitals there are research facilities specifically designed for that purpose, and there are usually a substantial number of nonmedical personnel, such as biochemists and physicists, participating in these programs. Modern research activities are performed, as indicated by the development of the radioisotope program. There are now twelve established radioisotope projects in veterans' installations, and additional ones are proposed for twenty-five new hospitals. Work with radioisotopes includes not only basic research but clinical and therapeutic application of radioactive isotopes that are useful for such purposes. There is no advance in medicine, however recent it may be, that is not available to the veteran patient. This principle is illustrated by the magnificent clinical research job that has been done with streptomycin in the Division of Tuberculosis. Without question, the most effective evaluation of this new drug on a large scale has been made by the Veterans Administration. In thirty-eight hospitals this drug has been given the widest possible trial and its therapeutic values thoroughly assessed. This is accompanied with numerous conferences on this problem at periodic intervals, and reports on the usage of this drug in over 7,000 patients have been presented and evaluated.

One of the major reasons for the high caliber of medical care given to the veteran is the constant emphasis placed on education and research. Furthermore, the Veterans Administration is now one of the great postgraduate medical institutions of America and consequently makes significant contributions in the education of all types of professional personnel. It has been amply demonstrated that the educational program in a veterans' hospital, by being available to all physicians in the area, has uplifted the general level of medical practice in the entire community. Some hospitals serve as the center for professional educational activities in the entire area. Many are now used for affiliation in programs of nursing education, particularly in the fields of psychiatry and tuberculosis. Since personnel do not always remain with the Veterans Administration but become disseminated throughout the various communities of the country, the nonveteran population benefits from this program and in the years to come will benefit perhaps as much as the veteran population itself.

AUXILIARY MEDICAL SERVICES

An important segment of the medical service rendered to veterans is that given by the "Home Town Medical and Dental Programs," through which a large part of the outpatient medical and dental care is provided in practically all parts of the United States.

In December 1945 the chief medical director instituted this plan of giving treatment to the veteran in his home town. The treatment is available only for service-connected disabilities. This program has been carried out through cooperation with local county medical societies and state medical societies over the country. Fee schedules have been established that are satisfactory to both medical societies and the Veterans Administration.

A veteran anywhere in the United States can receive from his home town physician medical treatment for any disability presumed to have developed on a service-connected basis. This has proved popular with the veterans in some sections of the country, and a great deal of home care service is rendered, particularly in the more remote, isolated and rural areas.

Physicians are paid a maximum of $6,000 per year for such services; that is to say, it is not possible for any one physician to collect more than that sum, regardless of the amount of service he may render during the year, and this is also true of any physician serving part time in the Veterans Administration. About 75,000 physicians have indicated a willingness to participate in this program. In the fiscal year 1949 about $16,000,000 was expended for this service, which was slightly less than

the expenditure for the preceding year, presumably because the agency's own installations were becoming more thoroughly staffed and because veterans soon learned that disability evaluations could be made only in the regularly established installations. In sixteen states osteopaths participate in this program. They have to be graduates of recognized schools of osteopathy and have to adhere to the licensure laws of the states in which they practice.

In addition, in the veterans' outpatient activities throughout the country there are about 1,400 full time physicians and 1,170 part time physicians operating a large system of outpatient clinics. As this program develops further, it is planned to have all outpatient activities in association with the veterans' hospitals, as is the case in any teaching hospital.

THE DENTAL PROGRAM

An important phase of the medical care of the veteran falls within the field of dentistry. The law to furnish dental treatment for veterans in order to furnish them a more complete health service was first embodied in Treasury Department Circular no. 165, Dec. 20, 1919. This was liberalized by Public Health Circular no. 77, July 9, 1920, and with further alterations was embodied in a Veterans Bureau regulation, no. 17, of Feb. 23, 1922. Public Law 242, 1924, was the first law mentioning dental treatment as a specific benefit. In the Executive Order of July 28, 1933 authority was placed in the hands of the veterans' administrator to control dental benefits.

Although the rules and regulations for the establishment of service connection of dental disabilities are extremely complex, it is biologically impossible to separate oral pathologic processes from the patient as an entity, and frequently service connection for treatment of a single tooth, if followed by subsequent degenerative processes involving that tooth and adjacent teeth, will result in bridgework and eventually full dentures—all related to service-connected injury to a single tooth. This means that a dental patient may become a ward for life at a continual increased annual cost for dental treatment. In World War II an effort was made to give soldiers complete dental rehabilitation, particularly those who went overseas, so that dental claims on the Veterans Administration since World War II have taken a tremendous upsurge. About 1,000 dentists are employed on a full time basis. They work for the most part in Regional Office clinics and in veterans' hosiptals. During 1949 this group performed about $8,000,000 of dental service. During the same period approximately $38,000,000 was paid to participating dentists for dental service to veterans, with some 57,000 dentists participating.

This method of outpatient treatment operates in every state and is of far greater magnitude both in the number of professional men participating and in dollar cost than is the program of outpatient medical care. Home town participating dentists are recommended by respective state societies, and fee schedules are set at state level. There are inequities between rural and urban areas and between states, but every effort is being made to correct this condition. The ceiling for dental outpatient care is the same for the dentist as for the physician, $6,000 per year, and although there have been abuses in this matter as there have been in consultant fees for services not rendered, it has been the policy to refer disciplinary action to the local dental or medical society, rather than through governmental policing, and the results have been generally satisfactory.

THE PROGRAM OF PHYSICAL MEDICINE AND REHABILITATION

An important division of medical activity in the Veterans Administration, the Program of Physical Medicine and Rehabilitation includes all those activities usually known as "physical therapy," "occupational therapy," "corrective therapy," "manual arts therapy" and "educational therapy." There is a well organized department of physical medicine rehabilitation, headed by a physician, in each veterans' hospital. Many of these physicians are certified by their specialty boards. Indeed, one fourth of the certified specialists in the field of physical medicine and rehabilitation are on full time duty with the Veterans Administration.

The agency conducts the largest program of this kind in the world in its one hundred and thirty-one hospitals and also conducts a rehabilitation hospital at Fort Thomas, Kentucky. The activities of this division include the medical rehabilitation of orthopedic patients as well as the rehabilitation of the 2,400 paraplegic persons who were problems immediately after World War II. Such veterans as require it are not only given the benefit of all possible therapeutic equipment to aid them in their rehabilitation but also may be prescribed appropriate activity with occupational and manual arts therapies of various types. The rehabilitation accomplishments for the 2,400 veterans with paraplegia have set an example for the rest of the world to follow. This same division is also responsible for the rehabilitation of the blind, with a special center being established for this group. The rehabilitation program is particularly noteworthy with the tuberculous patients. In addition to the physical medicine rehabilitation service at each tuberculosis hospital there is a special rehabilitation center for tuberculous patients at Oteen, N. C. Also, there are forty-two physical medicine rehabilitation clinics which are operated as a part of the Regional Office outpatient program. The entire program of physical medicine rehabilitation of wounded and maimed veterans has been one of the outstanding accomplishments and achievements of the Veterans Administration since World War II.

SUMMARY AND CONCLUSION

The American people have every right to be proud of the care that has been and is being given to the nearly 20 million veterans of the various wars, and this is particularly true of the high type of medical service that has been maintained since the conclusion of World War II. The accomplishment becomes all the more remarkable when it is considered that the quality of medical service was decidedly improved even though the veteran load increased from less than 5 million to nearly 20 million. This remarkable achievement in mass medical care has never been duplicated here or in any other country. There seems little doubt that the veteran who is entitled to it by law does receive the finest type of medical care in a country where medical science has reached its highest development. For this the American medical profession may justly be proud. It could not have been done without the wholehearted cooperation and support of American medicine in general and of medical education in particular. The entire program of

gearing the medical care of the veteran to the educational medical plants of the country and the employment as consultants of the finest medical brains in America have made the program possible. It is a tribute to Gen. Omar N. Bradley, Major General Paul R. Hawley, the present administrator, Major General Carl R Gray Jr., and the chief medical director, Dr. Paul B. Magnuson, who have been responsible for conceiving and executing this plan of medical care.

The major factor responsible for the success of the medical program of the Veterans Administration has been the constant adherence to the policy that it remain under the direction and jurisdiction of medical personnel. If this had not been true the entire program would, without doubt, have been a dismal and utter failure. There is no threat of socialization of medicine in the success of the Veterans Administration program because, as stated before, it could not have been done without the aid and cooperation of American medicine. Furthermore, it could not have been done unless it had remained under medical control, as it has from its inception. There are some who now stand ready to condemn the program because of an implied threat toward the socialization of medicine. Some who favor socialization of medicine point to the program with pride and say it demonstrates that the government can practice good medicine. Some have been secretly hopeful that the program would fail in order to demonstrate that the government could not practice first class medicine, but here again it must be emphasized that the major reason why the program has been successful is the aid, support and encouragement of American medicine. As long as the Department of Medicine and Surgery of the Veterans Administration remains under proper and authoritative medical control this type of superior medical care will always prevail for the veteran. If the time should come, however, when such control is passed to lay, bureaucratic or political hands, that will be the beginning of deterioration of the program of medical care for the veteran.

Therefore it is to the best interest of the American people, the medical profession and the veteran group always to be on the alert to see that this great enterprise of medical care continues under the direction of highly qualified American physicians. As long as the veterans' organizations continue to insist, as they have in the past, that members of the medical profession conduct this program it will continue to provide a high type of service. After a comprehensive study of the functions of the federal government, the Hoover Commission has recommended that all governmental hospitals be consolidated under a single agency. If this should be done it seems unlikely that the veteran would receive any better medical care than at present and it is likely that the quality of medical service would ultimately deteriorate from its present high standard.

Even at this early date after its creation, the Department of Medicine and Surgery of the Veterans Administration stands as an example of another magnificent achievement on the part of American medicine and illustrates what the medical profession is capable of doing, provided it is permitted to do so without bureaucratic or political controls. We are sure that the major objective of all concerned in this program has been attained and is being successfully maintained; that is, to give the American veteran the best medical care in the world.

Clinical Notes, Suggestions and New Instruments

SUCCESSFUL TREATMENT OF HYPERHIDROSIS USING BANTHINE®

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Excessive sweating of the hands, axilla, feet and other parts of the body is a troublesome complaint of some young women which occasionally has led to sympathectomy. The cholinergic pathways mediating sweating travel through the sympathetic nerve trunks and ganglia along with the adrenergic pathways to blood vessels. They are thus sympathetic in an anatomic sense but parasympathetic pharmacologically. Sympathectomy stops sweating in the region denervated but is associated with a compensatory increase of sweating in areas not denervated. Sympathectomy, therefore, has not been an entirely satisfactory treatment for hyperhidrosis.

Among 144 patients under treatment for peptic ulcer or other gastrointestinal disorders using the new parasympatholytic or anticholinergic drug, beta-diethylaminoethyl xanthene-9-carboxylate methobromide (banthine®),[1] several have commented on dryness of their hands.[2] Opportunity to treat a patient with pronounced hyperhidrosis was therefore welcome.

REPORT OF A CASE

Miss L. K., age 25, noticed excessive sweating of her hands, axilla and feet for a year and stated that this condition had become steadily worse. She could not hold a telephone or handle a stenographer's pad without wetting them. Even in moderate temperature, perspiration ran down from the axilla continually. When she worked under tension, sweat dripped from the hands, moistened clothing and required constant use of handkerchiefs. Previous use of atropine had not helped.

When examined, her hands were cold, clammy and glistening with moisture. Forty-five minutes after ingestion of two 50 mg. banthine® bromide tablets, hands, axilla and feet became warm and dry. This initial dose was taken at 4 p. m. and sweating was not noticed again until the following morning. During the next week, one 50 mg. oral tablet was taken daily every four hours and perspiration definitely diminished but did not disappear. The following week 1½ tablets or 75 mg. were taken every four hours and sweating further diminished. However, during a period of strain in the office, she again tried 2 tablets and the hands became entirely dry. The third week 2 tablets were taken every four hours, and she perspired "very little or none at all." Following this she regulated the dose herself, using 50 or 75 mg. at four hour intervals much of the time but taking 100 mg. whenever strenuous work was anticipated and also "when she dressed for a date in the evening." The period of dryness following 100 mg. usually started 30 to 45 minutes after the medicine and lasted four or five hours. Side effects, including dilatation of the pupil, dryness of the mouth and a moderate tendency toward constipation troubled her little, and she is exceptionally well pleased.

COMMENT

We have treated 3 additional women: one, age 22, who had noticed excessive sweating of hands and feet as long as she could remember; another, age 30, who described excessive sweating first noticed in the eighth grade, and another, age 27, who had excessive sweating for nine years. Results are like

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1. Supplied by G. D. Searle & Company.
2. Longino, F. H.; Grimson, K. S.; Chittum, J. R., and Metcalf, B. H.: An Orally Effective Quaternary Amine, Banthine, Capable of Reducing Gastric Motility and Secretions, Gastroenterology **14**: 301, 1950.

those reported by the first patient. An effective and well tolerated anticholinergic drug should control hyperhidrosis. Since banthine® has proved effective in the case reported and in 3 others, it seems probably that sympathectomy will no longer be necessary for patients with hyperhidrosis.

DIABETES MELLITUS IN ASSOCIATION WITH MYASTHENIA GRAVIS

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Diabetes mellitus is a common disease, yet a survey of the literature fails to reveal any reported case of its association with myasthenia gravis. In most instances the disturbed metabolism in human diabetes is explainable on the basis of a deficiency of insulin. In remarkably few cases is there clear evidence, either preceding or following the establishment of the diabetic state, of a disturbance of function of glands of internal secretion which are known to play an important role in carbohydrate metabolism. The relationship with acromegaly, hyperthyroidism, myxedema, Addison's disease and adrenal hyperfunction has recently been reviewed.[1] In the majority of persons with diabetes the function as measured at present of the anterior pituitary, thyroid and adrenal cortex is normal.

In myasthenia gravis it is postulated that the immediate cause of the symptoms is a decrease in acetylcholine synthesis resulting in a defect in function at the myoneural junction.[2] The mechanism of the beneficial effect with neostigmine therapy is not known except that it may be due to a reduction in the serum cholinesterase, thus allowing the available acetylcholine to act.[3] The disease does not appear to be connected with endocrine function except during pregnancy and in relation to menstruation and thyroid activity.[4] Few patients with myasthenia gravis show evidence of exophthalmic goiter, but the majority of patients with the latter disease have myasthenia. The diseases may be related, since there are common pathologic features such as lymphocytosis, lymphorrhages and creatinuria.[5] Addison's disease and acromegaly may show similar changes.[6] The effect of these diseases on the myoneural mechanism is not known. That there may be some relationship, although obscure, between diabetes mellitus and myasthenia gravis is suggested by the fact that there may also be a disturbance in metabolism with a lowered dextrose tolerance in the latter.[5a] Furthermore, insulin has been used with some benefit in myasthenia gravis.[7] The following case may represent only a chance association of the two diseases.

REPORT OF CASE

A Negro woman aged 59 entered Los Angeles County General Hospital in November 1949. She had been a known diabetic patient for ten years, having taken 10 units of protamine zinc and 5 units of crystalline zinc insulin daily. She had been pregnant three times but had an abortion on every occasion. In 1914, after the second abortion, she began to have trouble with her eyes. For weeks at a time she had difficulty in raising her eyelids fully; on occasions she used strips of adhesive tape for this purpose. Shortly thereafter she began to see double and could not move her eyes much in any direction. After the last spontaneous abortion in 1926 she had a total hysterectomy because of fibroids. The ocular difficulties continued with exacerbations and remissions of several weeks' duration until the present. In 1943 she first used glasses with lid props. In 1948 she started to have generalized weakness and was told by a physician that she had a "thyroid condition." Four months prior to entry she began having difficulty in swallowing, with the feeling that "material collected in the throat." Sometimes solid foods had to be washed down with fluids. The patient came from a "goiter belt" in Utah, and members of the family, including a sister, had goiters. Physical examination revealed a well developed, thin Negro woman in no distress. Her blood pressure was 130 systolic and 75 diastolic, with a pulse rate of 100 and normal temperature. There was ptosis of both lids but especially on the left side. There existed a decided external ophthalmoplegia with the exception of a small degree of right lateral gaze. Convergence was poor, and there was no lid lag. Eyeball tension was normal and proptosis absent. The fundi showed only slight arteriovenous nicking. There was a right lower facial weakness. The thyroid was diffusely enlarged without a bruit. The heart was not enlarged, but a faint systolic murmur could be heard over the entire precordium. The lungs were clear. There was severe weakness of the right arm and questionable weakness of the quadriceps muscles bilaterally. The deep reflexes were active and equal, but there were no pathologic toe reflexes. The palms were cold and sweaty, but there was no tremor.

Laboratory studies revealed a white blood cell count of 4,500 with a normal differential. The hemoglobin was 14.5 Gm. The fasting blood sugar level was 315 mg. per hundred cubic centimeters with a carbon dioxide–combining power of 55 volumes per cent and a nonprotein nitrogen determination of 37 mg. per hundred cubic centimeters. The icterus index was 10; the serum albumin was 5.5 Gm. and the serum globulin 2.8 Gm. per hundred cubic centimeters. The thymol turbidity reading was 2 units; the cephalin cholesterol flocculation reading was zero. Blood iodines were 6.6 and 5.2 micrograms per hundred cubic centimeters. Serum sodium was 342 mg. and potassium 24 mg., per hundred cubic centimeters. The urine contained sugar (4 plus) but no acetone or albumin and was clear. Urine creatinine was 1,150 mg. and creatine 300 mg. in twenty-four hours. Barium study of the esophagus showed no abnormality of the swallowing mechanism. A roentgenogram of the chest failed to reveal a substernal goiter or thymic enlargement. Muscle biopsy (calf) showed normal tissue. An electrocardiograph revealed slightly elevated P waves in limb leads 2 and 3. An injection of 0.3 mg. of epinephrine hydrochloride solution resulted in a fall of eosinophils from 55 to 9 and lymphocytes from 3,050 to 1,350 per cubic centimeter. The polymorphonuclear leukocytes rose from 5,850 to 10,450. There was no change in uric acid excretion.

Injection of neostigmine methylsulfate 0.5 mg. intravenously resulted in a dramatic increase in the strength of the patient within one-half hour and almost complete disappearance of the ptosis. The diabetes was well controlled on a mixture of 30 units of crystalline zinc and 10 units of protamine zinc insulin. This regulation failed to abolish or improve any of the signs or symptoms of myasthenia gravis. Subsequently the oral administration of 90 mg. of neostigmine bromide in six divided doses daily resulted in almost complete disappearance of muscular weakness, ptosis and ophthalmoplegia.

COMMENT

The patient had the typical symptoms of myasthenia gravis: ptosis, diplopia, ophthalmoplegia and, finally, the appearance of dysphagia and weakness of the extremities.[8] The observations were most pronounced after sustained effort and disappeared after rest. The course was characterized by exacerbations and remissions. Although the effect on eye signs is supposedly poor, this patient showed an excellent response in all respects to neostigmine therapy.[9]

From the Diabetic Service (Dr. J. Short, Senior Physician) of Los Angeles County General Hospital and the College of Medical Evangelists.

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That there is a relationship between the pituitary and myasthenia gravis was suggested in 1935 when Simon obtained decided relief in symptoms of 2 patients with myasthenia gravis after injection of anterior pituitary extract.[10] It has recently been shown that one of the hormones of the pituitary, the adrenocorticotropic hormone (ACTH), induces a reduction in the mass of the thymus, which is a source of substance inhibiting acetylcholine synthesis. Clinically, this hormone has been used with some decrease in muscular weakness and fatigability in patients with myasthenia gravis.[2] In the case reported herein the patient showed, surprisingly enough, a normal response to the injection of epinephrine, which supposedly stimulates the production of pituitary adrenocorticotropic hormone, with a fall in lymphocytes and eosinophils and a rise in polymorphonuclear cells. There was no increase in muscular strength.

In 1936 Monat suggested that an increase in muscle glycogen might be beneficial in myasthenia gravis.[11] Insulin and carbohydrate administration resulted in decided improvement. Kostman artificially raised the blood sugar levels of patients with myasthenia gravis and obtained mild increases in muscular strength.[12] These beneficial results, however, may have been due to an elevation of the general nutritional status. In this patient there was little if any improvement in strength with control of the diabetes alone.

SUMMARY

1. A case of diabetes mellitus in association with myasthenia gravis is reported.

2. The possible relationship of these two diseases is discussed.

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AUREOMYCIN IN EPIDEMIC PAROTITIS

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Epidemic parotitis, or mumps, is a self-limited disease which does not ordinarily cause great concern to the physician except in those unusual instances in which complications occur, such as orchitis, meningoencephalitis, suppurative parotitis, pancreatitis or mastitis, or when the disease occurs in adults who are more liable to have severe symptoms. The treatment of this condition to date has been purely supportive. Such measures as rest, diet, good oral hygiene and sedation have been about all the physician could recommend.

With the discovery of newer antibiotics such as aureomycin and chloramphenicol, which have extended specific drug therapy into the field of virus-caused infections, it is somewhat surprising to find in the literature few references to the effectiveness of these agents in some of the commoner diseases thought to be of virus causation. We have encountered epidemic parotitis in 3 adults, to whom aureomycin, 0.5 Gm. every six hours for eight doses, was subsequently administered in order to ascertain the therapeutic possibilities of this antibiotic in this disease. In all 3 patients, within twenty-four hours after the start of treatment, there was such a dramatic improvement, both subjectively and objectively, that it has been deemed worthy to report these cases in the hope that perhaps further interest will be stimulated.

REPORT OF CASES

CASE 1.—Miss N. C., a 19 year old student nurse, was well until four days before admission to the hospital, when she contracted what she thought was a common cold. This was marked by coryzal symptoms, mild sore throat, cough and general malaise. These symptoms continued until the night before admission, when she awakened with a painful swelling under the ramus of the right mandible, chills and a temperature of 103 F. The patient felt ill and reported sick the following morning. She was admitted to the hospital on Dec. 29, 1949, when she had pain in the right side of the face and neck, anorexia, dry mouth, sore throat and marked dysphagia. The right submaxillary and the right parotid glands were greatly swollen and tender. The left parotid and submaxillary glands were slightly swollen. On December 29 her temperature fluctuated between 101 and 103 F. On December 30, the glandular involvement had increased and the patient was very uncomfortable. Consequently, at noon on this day, 500 mg. of aureomycin was given and the dose repeated at intervals of six hours day and night. On December 31 her temperature had fallen to 99.2 F. and the subjective symptoms had cleared appreciably. The objective changes were dramatic, for it seemed incredible that such marked regression of the swelling could occur in twenty-four hours' time. Within forty-eight hours all the swelling was gone except slight residual enlargement of the right submaxillary gland and the temperature was 98.6 F. In another three days the glandular enlargement disappeared entirely. The patient's further convalescence was uneventful.

CASE 2.—Miss J. S., a 20 year old graduate nurse, who worked with the aforementioned patient (case 1), was admitted to the hospital on Jan. 2, 1950, complaining of malaise, headache and a tender and swollen neck. The swelling had begun two days prior to admission and had become progressively worse, so that the swelling, which was in the right submaxillary and parotid glands, was rather conspicuous. Headache, malaise and anorexia became more pronounced. Aside from this swelling, mild hyperemia of the pharynx, slight posterior cervical lymphadenopathy and elevation in temperature to 99.4 F., results of examination were normal.

The patient was given aureomycin on the first day of her hospitalization, with the same schedule as in the first case, and within twenty-four hours there was disappearance of the swelling except for slight enlargement of the right submaxillary gland. This swelling disappeared entirely in five days. The patient stated that she felt much better, and the malaise and pain in the region of the swelling had decreased greatly. Recovery was prompt and dramatic.

CASE 3.—R. S., a 37 year old male physician, who had never had epidemic parotitis, presented moderate involvement of the left parotid gland. The local discomfort overshadowed any general symptoms which may have been present. These local symptoms were of less than twenty-four hours' duration when treatment with aureomycin was started. He was given 0.25 Gm. every four hours, day and night. Within twenty-four hours after treatment with this antibiotic was started, the right parotid showed minimal involvement and the left parotid had increased slightly in size. However, forty-eight hours after treatment was started, and approximately seventy-two hours after the onset of symptoms, the subjective complaints referable to the right parotid had disappeared along with the objective changes. The left parotid had regressed remarkably, and there were minimal subjective symptoms present on this side. On the fourth day of the illness the subjective complaints had disappeared and only a small area of palpable induration in the left parotid remained. The patient received a total dosage of 4 Gm. of aureomycin. A urine specimen on the first day of illness was normal. The total leukocyte count was 5,400, with 54 neutrophils and 46 lymphocytes.

These 3 cases are in strong contrast with patient A. K., a 39 year old man who presented bilateral parotid involvement with daily temperature rises up to 103 F. for ten days. Pronounced local subjective symptoms and right-sided orchitis prolonged his convalescence for three weeks. This patient received no aureomycin and had only such symptomatic measures as necessity demanded, plus bed rest and nursing care.

SUMMARY AND CONCLUSIONS

Two women who had contracted epidemic parotitis were given aureomycin by mouth in 0.5 Gm. doses every six hours for eight doses, beginning on the second day after swelling in the glands had commenced. There was definite improvement within twenty-four hours, both subjectively and objectively. A third patient, a man, received aureomycin (0.25 Gm. every four hours) within twenty-four hours of onset of symptoms.

10. Simon, H. E.: Myasthenia Gravis, J. A. M. A. **104**: 2065-2066 (June 8) 1935.
11. Cited by Robinson.[7b]
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While no definite conclusions can be drawn from treating 3 patients in the manner described, the results obtained would suggest that aureomycin may be of definite value in this disease.

These cases are reported in the hope that further interest and investigation of this agent in epidemic parotitis may be stimulated. So far as we are able to ascertain, there have been no reports in the literature to date of the effectiveness of this agent in mumps. All laboratory observations in these cases were normal except for a slight increase in the lymphocyte count.

TOXIC PSYCHOSIS DUE TO OVERDOSAGE WITH PROPHENPYRIDAMINE (TRIMETON®)

Report of Two Cases with Recovery

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In view of the extensive use of the antihistaminic drugs, instances of toxicity or unusual responses should regularly be brought to the attention of the members of the medical profession. Reports of serious side actions and even fatality [1] have been noted. The former have followed either usual or excessive dosages. Toxic reactions are variable and may occur with a small dose in a person at one time but may fail to occur in the same person receiving larger doses at another time.[2] Toxic psychosis due to overdosage with prophenpyridamine (trimeton®) has occurred in 2 cases with recovery. No reports of poisoning, unusual toxic effects or fatalities have been found following the use of prophenpyridamine (1-phenyl-1-[2-pyridyl]-3-dimethylaminopropane). It is generally considered to be an antihistaminic of high activity and relatively low toxicity. Aside from its antihistaminic action it possesses some antispasmodic activity as measured by its ability to relax isolated rabbit intestine.

The usual common and undesirable symptoms occurring during the administration of the antihistaminic drugs are well known. These include weakness, drowsiness, dizziness, nervousness, nausea, paresthesias, fatigue, disorientation, confusion, dryness of the mouth, headache, diarrhea and dermatitis. More serious effects noted have been urinary obstruction,[3] hysteria,[4] mental confusion and hallucinations,[2] fainting spells,[5] and granulocytopenia.[6] An acute psychosis followed administration of tripelennamine (pyribenzamine®) hydrochloride (100 mg. every four hours).[7] Recovery followed withdrawal of the drug.

Rives, Ward and Hicks [1] reported a fatality due to methapyrilene (thenylene®) hydrochloride in a 16 month old white girl following the accidental ingestion of 100 mg. of the drug. Symptoms appeared in two hours. These included vomiting and listlessness followed by excitation, convulsions, twitchings and fever (105 to 107.2 F.). The respiratory rate increased to 50 while the pulse rate decreased to 50, suggesting increased cerebral pressure. Acidosis, azotemia and death occurred in fifteen hours. The significant observations at necropsy were cortical edema of the brain and upper nephron nephrosis.

The following 2 cases of toxic psychosis due to prophenpyridamine tend to confirm the relatively low toxicity claimed for the drug.

REPORT OF CASES

Case 1.—G. B., a boy 4 years of age, was ill with spasmodic croup. His mother was given a prescription for the child calling for ipecac syrup, ½ teaspoon every fifteen minutes until vomiting would ensue. In her handbag she had an unfilled prescription for prophenpyridamine tablets for herself, which was given for chronic urticaria with severe pruritus. She had this prescription filled instead and proceeded to give the child ½ tablet (12.5 mg.) of prophenpyridamine every fifteen minutes. Three and one-half hours later the mother called to report that the child had not yet vomited. By this time he had ingested 175 mg. of the drug. Examination revealed that the child was extremely dry and warm. There was a pronounced flushing of the skin as in atropine poisoning. The child had a fever (102 F.). He had not voided in six hours. He was irrational, delirious and disoriented. The pupils were decidedly dilated, and the croup was decidedly worse. He was ordered to be hospitalized, but the parents refused hospitalization. Fluids were forced. No medicament was given except 10 drops of phenobarbital elixir every four hours for nervous symptoms. Within eighteen hours the patient was much improved and he voided. From then on recovery was uninterrupted. There were no sequelae. A blood count done the day after ingestion of the prophenpyridamine did not reveal abnormalities.

Case 2.—L. R., a white female school teacher, aged 23, was given a prescription for prophenpyridamine tablets (25 mg.) on Aug. 12, 1948, for an angioneurotic edema of the face and forearms. These tablets were to be taken every four hours. All allergic manifestations disappeared within forty-eight hours. Two months later similar lesions appeared, which again responded to the same treatment. In March 1949 generalized hives appeared, which responded to the same therapy in four days.

On Sept. 6, 1949 the patient noted a recurrence of hives on the face and forearms. Since the current school session was imminent, she was extremely self conscious about her skin condition. She could not "face her pupils with an ugly skin." To clear up the skin condition as rapidly as possible she took two or three tablets (50 to 75 mg.) of prophenpyridamine every two hours, so that within sixty hours (September 6, 7 and 8) sixty tablets were consumed, equivalent to 1,500 mg. of the drug.

On the morning of September 9 the mother noted the patient acting queerly. She complained that strange persons were annoying her and had some difficulty in walking. Despite this, and despite admonitions to stay at home, she went to her school. About one hour later there developed lower limb rigidity with tremors of hands and knees. She complained of dizziness, blurring of vision and dryness of the mouth. She was removed to her home with difficulty, since the rigidity assumed a spastic type of stiffness associated with an ataxic and unsteady gait. Muscular incoordination was apparent. Flexion of the knees was difficult because a tremor of the legs appeared when this was attempted. The temperature was 100 F. (orally), the pulse rate 100 per minute and the respiratory rate 30 per minute. The pupils were dilated. The skin was hot and dry, and the face was flushed. The heart was normal except for tachycardia. The blood pressure was 150 mm. of mercury systolic and 90 mm. of mercury diastolic. The lungs were clear. Transient nausea appeared, although the appetite was good at first. The bowel function and the urinary output were normal. That afternoon the patient manifested restlessness, excitability, hallucinations, especially visual, and decided loquaciousness. A barrage of words kept flowing almost unceasingly. She was completely disoriented. She continued in a confused, deluded state for several hours.

She was given a dose of magnesium sulfate, but gastric lavage was not performed because the period of ingestion had extended over sixty hours. The reaction of the patient closely resembled that in atropine poisoning, i. e., dilated pupils with blurred vision, dry hot skin, dry mouth, tachycardia, flushed face and evidence of cerebral excitation. Because of this similarity it was decided to treat the patient with an atropine antagonist, which would act like histamine though not as intensely.

It is well known that histamine and acetylcholine have similar actions.[8] Small, progressively increasing doses of neostigmine have been administered orally (instead of histamine) as a

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7. Lott, G. N.; Krug, E. S., and Glenn, H. R.: A Case Report of Drug Delirium Clinically Interpreted as Being Due to Pyribenzamine, Journal Lancet **48**: 242 (Sept.) 1948.
8. Rackemann, F. M.: Allergic Diseases with Specific Reference to Histamine and Acetylcholine: Report on Medical Progress, New England J. Med. **222**: 674 (April 18) 1940.

desensitizer against histamine. Neostigmine was used in this instance for its histaminic action.[9] As neostigmine is an atropine antagonist as well as a cholinesterase inhibitor with histaminic action, it was decided to use the drug as a nontoxic and logical antidote in this case. Accordingly neostigmine methylsulfate (1:2,000) 0.5 mg. was injected subcutaneously at once and one tablet of neostigmine bromide 0.015 Gm. was given orally every four hours. Bromides and phenobarbital were given as sedatives to allay the cerebral irritability. Fluids were forced as much as possible. The next day, Sept. 10, 1949, the patient was improved but kept up her verbal barrage. Hives reappeared and caused the patient to focus her talk on this condition. Her walking was perfectly normal, no residue of incoordination or spasticity being noted. Appetite was depressed. Her bowels functioned normally although she complained of recurrent and sometimes severe abdominal cramps, an occasional effect of neostigmine. Her urinary output and results of urinalysis were normal. Jaundice did not appear.

A blood count revealed no evidence of a blood disturbance. The hemoglobin was 82 per cent, red blood cells 4,060,000, white blood cells 10,100 per cubic millimeter, with a differential of polymorphonuclear leukocytes 60 per cent, small lymphocytes 36 per cent, monocytes 3 per cent and eosinophils 1 per cent. The cephalin flocculation test was negative in twenty-four and seventy-two hours.

The next day, September 11, the patient had a secondary reactive depression. She became unduly reticent, obstinate and stubborn. She refused to answer questions put to her by the family. This continued until the third day, when complete restitution to mental and physical normalcy was evident.

CONCLUSION

1. It appears that prophenpyridamine (trimeton®) in toxic doses has an atropine-like effect. (Atropine is also antihistaminic in character.)

2. The margin of safety of prophenpyridamine is relatively great, and its toxicity is relatively low.

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FEMORAL HERNIA

Report of Two Unusual Cases

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Within a period of four months we have had the experience of operating on 2 patients, each with a femoral hernia of an unusual nature. These cases, which were found in the extremes of age, are being reported as interesting surgical experiences as well as for statistical record.

FEMORAL HERNIA IN A BOY FIVE YEARS OF AGE

A review of the literature impresses one with the rarity of femoral (crural) hernia in children, particularly in those less than 6 years of age. Denoeux [1] mentioned that in 1871 Werhner collected 5,341 cases of femoral hernia, only 7 of which occurred in persons less than 6 years of age, an incidence of 0.13 per cent. He also mentioned Malgaigne's observation that he had seen only 2 cases in patients below the age of 20 years. Velasco Blanco and Echegaray [2] reported crural hernia in a boy 11 years of age as the first case they observed after having performed hundreds of operations for hernia in children. They referred to Robert Rutherford's statistical report in 1927, in which 5 such hernias occurred among 1,098 cases observed in London Children's Hospital between 1908 and 1927, and to John Langoton's report of 1 case in 13,000 hernias in children—the ages of these 6 children are not mentioned. Lloyd [3] in reporting his case of a femoral hernia in a boy aged 5 years as an extremely rare occurrence mentioned it as the only example in three years at the Hospital for Sick Children, London, during which period 715 children with inguinal hernias were admitted for operation. He quoted John Fraser ("Surgery of Childhood," 1926) as stating that the latter had "never met with an instance of the error in a male child." Ladd and Gross [4] in their exhaustive work dealing with rare and obscure lesions failed to mention femoral hernia in childhood. There is much controversy among authors regarding the congenital origin and sex predominance of this unusual lesion; the weight of opinion favors a noncongenital origin and, as in adults, a predominance in the female.

REPORT OF CASE

A white boy aged 5 years was admitted to Fitkin Memorial Hospital, Neptune, N. J., Aug. 28, 1949, for surgical operation on a mass in the left inguinal region. The patient's parents had noticed a "lump in the groin" one year previously but had never tried to reduce it. The child played naturally, had normal daily bowel movements and offered no complaints until two days before admission, when he had slight pain in the area. The past history disclosed an uncomplicated birth on Sept. 2, 1943, at eight months gestation, weighing 4 pounds, 12 ounces (2,155 Gm.). Chickenpox at 4 years and measles at 5 years of age were the only previous illnesses. Physical examination revealed a normal, healthy boy of the stated age with satisfactory mental development. A soft, smooth, slightly tender mass measuring 4 by 2 cm. beneath the left inguinal ligament was not reducible. The diagnosis of femoral hernia was made preoperatively in spite of the rarity of the condition.

Operation was performed on Aug. 29, 1949, with the patient anesthetized by the drop ether method. A Bassini inguinal incision was employed to expose the hernial sac in the femoral canal. It contained 10 cm. of omentum bunched against a sac neck too narrow for abdominal replacement of the mass. Rather than incise the inguinal ligament or Gimbernat's ligament, the omentum was resected and the stump easily fed back through the opening. The sac was ligated high in the canal and amputated, and the falciform ligament approximated to the inguinal ligament and to the pectineal fascia. Fine cotton sutures were used throughout and Michel clamps for skin closure.

Postoperative recovery was rapid; the patient was ambulatory within twenty-four hours after surgical intervention. A rise in temperature to 101 F. (rectal) on the third postoperative day for a few hours, without symptoms or signs, was treated as a transient pulmonary atelectasis. Procaine penicillin G 300,000 units in aqueous solution was given intramuscularly twice daily from the day of operation to the sixth day. A high caloric diet supplemented with multiple vitamins was maintained. The patient voided the day of operation, and his bowels moved spontaneously on the fourth day. The skin clamps were removed on the sixth day, revealing healing by primary intention. The patient was discharged Sept. 5, 1949, seven days postoperatively, in good condition. At the time of writing, four months after the operation, he is well and the wound strongly healed.

STRANGULATED MECKEL'S DIVERTICULUM IN A FEMORAL HERNIA

Meckel's diverticulum is in itself a comparatively rare condition. Strohl and McArthur,[5] reviewing autopsy and cadaver reports by several investigators, found an incidence of 1.3 per cent. At the time of surgical intervention, when routine exploration is seldom performed, the incidence has been reported as 0.1 per cent (Balfour [6]). In 1934 Gray [7] summarized from the literature 169 cases of Meckel's diverticulum within a hernial sac: 52.6 per cent occurred in inguinal, 21.8 per cent in umbilical and 19.5 per cent in femoral hernias.

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We were convinced that a strangulated Meckel's diverticulum in a femoral hernia must be a most unusual combination, and our review of the literature [8] revealed only 22 previous cases on record. Sweet [8b] reviewed the literature from the year 1700 and found 14 cases, adding his own case. Strohl and McArthur [5] in 1939 again reviewed the incidence and by adding their 2 cases brought the total to 18. In the last case reported operation was performed in 1944 by Patterson,[8c] and the lesion consisted of an acutely inflamed diverticulum incarcerated in a femoral hernia.

It is difficult to determine how many of the 22 femoral hernias previously reported were strangulated or merely incarcerated. Differences in terminology as well as inaccuracy in the earlier case reports make a division impossible. For the same reasons it is not known which diverticulum was hernial content because of an acute pathologic condition, as in Patterson's case, or which was strangulated within the sac because of intra-abdominal mechanical forces, as in the following case.

REPORT OF CASE

A white woman aged 62 was admitted to Monmouth Memorial Hospital, Long Branch, N. J., on May 8, 1949, with the chief complaint of an irreducible swelling in the right groin. The patient had been aware of a right femoral hernia for two years, and while taking a bath on the day prior to admission she noticed that the hernia could not be reduced. The following morning she became nauseated but did not vomit or have bowel or urinary disturbances. The patient's past history consisted of "joint pains" at 17 years of age, tonsillectomy at 36, total dental extractions for abscesses at 37 and menopause at 53. She had never been pregnant. On admission the temperature was 99 F. (oral), the pulse rate 75, the respiratory rate 30 and the blood pressure of 188 systolic and 100 diastolic. A tender, irreducible mass measuring 8 by 6 cm. was palpable in the right femoral canal.

Operation was performed on the day of admission, with the patient under spinal anesthesia supplemented with intravenously given thiopental sodium (pentothal sodium®) and oxygen inhalations. The hernia was approached through an inguinal incision into the inguinal canal. Since it was impossible to reduce the sac from above, the inguinal ligament was obliquely cut across exposing the sac. It contained 30 cc. of sanguineous fluid and a loop of small intestine with a 7 cm. diverticulum arising from the antimesenteric border. The entire length of the diverticulum was of uniform caliber; it had a small supplying mesentery and was a purplish hue which did not lighten with warm applications. It was excised longitudinally, the intestinal defect closed transversely with fine chromic surgical gut and the intestine returned to the peritoneal cavity. The hernial sac was doubly ligated at the neck and amputated. The repair of the hernia was completed in the femoral and inguinal regions with fine cotton sutures, using Michel clamps for skin closure.

Postoperative recovery of the patient was rapid and uneventful. She became ambulatory within twenty-four hours in spite of a transient rise in temperature to 101.2 F. (rectal) on the first day. Her bowels moved spontaneously on the third day, and a regular diet was easily taken at that time. She received multiple vitamin therapy and 300,000 units of procaine penicillin G in aqueous solution twice daily until the sixth day, at which time the skin clamps were removed. Healing was excellent, and the patient was discharged the following day, May 15, 1949. At present, eight months postoperatively, the wound is strong and there is no evidence of recurrence or of intra-abdominal symptoms.

Microscopic examination of a portion of intestine showed that it was extremely hemorrhagic, with an absence of mucosa on the inner surface. There was a layer of circular smooth muscle, but gastric glands were not found. The diagnosis was consistent with strangulated Meckel's diverticulum.

SUMMARY AND CONCLUSION

1. A case of femoral hernia in a boy 5 years of age is reported. The literature is too meager for an evaluation of the incidence of this condition, but it is certainly extremely rare.

2. A case of strangulated Meckel's diverticulum in a femoral hernia in a woman aged 62 is reported as the twenty-third case on record.

8. (*a*) Brin, H.: Strangulation or Inflammation of a Meckel Diverticulum, in a Hernia, Bull. et mém. Soc. nat. de chir. **31**: 366 (April 5) 1905. Pollidori, A.: Contribution to the Incarceration of Meckel's Diverticulum in Hernias, Riforma med. **46**: 682 (May 5) 1930. Donati, G. S.: Strangulation of Meckel's Diverticulum Resulting from Crural Hernia on the Right, Policlinico (sez. chir.) **38**: 278 (June 15) 1931. Quiri, A.: Occlusion from a Meckel Diverticulum in the Sac of a Crural Hernia, Arch. ital. chir. **54**: 16, 1938. (*b*) Sweet, R. H.: Incarceration of a Meckel's Diverticulum in a Femoral Hernia: Report of Case with Review of the Literature, New England J. Med. **202**: 997 (May 22) 1930. (*c*) Patterson, F. M. S.: Incarceration of a Meckel's Diverticulum in a Femoral Hernia: Report of a Case, North Carolina M. J. **7**: 59 (Feb.) 1946. (*d*) Strohl and McArthur.[5] Balfour.[6] Gray.[7]

MENINGITIS DURING GOLD THERAPY

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The frequency of toxic reactions to gold therapy is well known and has been stressed in many reports. Dermatologic, renal, gastrointestinal, hepatic or hematopoietic reactions have been reported in as high as 77 per cent of cases of rheumatoid arthritis treated with gold.[1] Complications involving the nervous system are perhaps the rarest of all. In 900 patients with rheumatoid arthritis treated with gold, Hartfall and his associates [2] found toxic reactions in 41.9 per cent but none involving the nervous system. Similar findings have been reported in other large series, and Lescher [3] stated that complications involving the nervous system are the rarest of all accidents resulting from chrysotherapy.

In an exhaustive review of the toxic effects of gold, Sundelin [4] reported cases with central and peripheral nervous system manifestations. Cerebral symptoms ranged from simple depressions to frank psychoses. He also reported local nerve palsies, herpes zoster and polyneuritis. Leiper [5] reported a case of polyneuritis due to gold in which there was a widespread flaccid paralysis of all limbs associated with an increase in cerebral spinal fluid protein and pleocytosis. Rawls and his colleagues [6] noted 2 cases of "encephalitis with vertigo" following the use of gold in rheumatoid arthritis, but no mention was made of examinations of spinal fluid. No cases of meningitis caused by gold have been reported.

The following case of meningitis is presented as an unusual complication of chrysotherapy. Though the causative relation of gold cannot be proved, it is felt that the temporal relations between the administration of the gold and the development of symptoms, the therapeutic response to British antilewisite 2,3-dimercaptopropanol (BAL) and the absence of any evidence for another etiologic agent all constitute presumptive evidence that gold was the responsible agent.

REPORT OF CASE

A 57 year old white man was admitted to the hospital on July 27, 1949 with a long history of rheumatoid arthritis involving practically all joints. Physical examination and roentgenograms revealed moderately advanced rheumatoid changes of the fingers, wrists, elbows, knees and ankles, with swelling, increased heat and tenderness in many of the joints. The blood sedimentation rate (Westergren) varied between 92 and 110 mm. per hour. Results of other laboratory studies, including

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2. Hartfall, S. J.; Garland, H. G., and Goldie, W.: Gold Treatment of Arthritis: A Review of 900 Cases, Lancet **2**: 784; 838, 1937.
3. Lescher, F. G.: Nervous Complications Following Treatment by Gold Salts, Brit. M. J. **2**: 1303, 1936.
4. Sundelin, F.: Die Goldbehandlung der chronischen Arthritis unter besonderer Berucksichtigung der Komplikationen, Acta med. Scandinav. Supp. **117**: 1, 1941.
5. Leiper, E. J. R.: A Case of Polyneuritis Due to Gold, Brit. M. J. **2**: 119, 1946.

urinalyses, blood cell counts and renal and hepatic function tests, were within normal limits.

On Aug. 4, 1949, chrysotherapy was instituted. The patient received 15 mg. of gold thioglucose (solganal-B oleosum®) on that day, 25 mg. one week later and three doses of 50 mg. at weekly intervals, so that by August 29 a total dosage of 180 mg. had been administered.

On August 18 an afternoon fever of 109 F. was noted and persisted thereafter, reaching 101.2 on August 29. During this time there was no change in the patient's clinical condition, and blood cell counts, results of urinalyses and renal and hepatic function tests remained normal. Blood cultures revealed no growth. Gold intoxication was considered, but it was felt that the fever alone did not contraindicate further chrysotherapy.

On August 31, the patient complained of pain and stiffness of the neck and examination revealed nuchal rigidity and a positive Kernig's sign. Lumbar puncture revealed clear colorless fluid with an initial pressure of 240 mm. of water. The cerebrospinal fluid contained 62 cells per cubic millimeter, 40 of which were lymphocytes and 22 polymorphonuclear leukocytes; the total protein content was 97 mg. per hundred cubic centimeters, chlorides 690 mg. and sugar 45 mg. The Wassermann reaction was negative and the colloidal gold reaction normal. Smear of the fluid was negative for bacteria and acid-fast bacilli, and culture and guinea pig inoculation were negative.

The patient was immediately given BAL, receiving 1.5 cc. (150 mg.) intramuscularly every four hours for four doses and 1.5 cc. daily thereafter for six days. His temperature immediately fell to normal and remained so. Nuchal rigidity subsided in several days. There were no other positive neurologic findings, and the patient remained mentally clear, complaining only of headache. Blood cell counts, blood cultures and results of other laboratory studies were unchanged. Roentgenograms of the skull and an electroencephalogram were within normal limits. Results of complement fixation tests for mumps, lymphocytic choriomeningitis, leptospirosis and lymphopathia venereum were negative. Subsequent spinal fluid examinations revealed a gradual decrease in cell count and protein content, reaching normal values in eight weeks.

After subsidence of his meningitis, the patient noted decided improvement in his arthritis and was discharged essentially asymptomatic, although his sedimentation rate remained elevated (50 to 60 mm. per hour). When he was last seen in January 1950, there had been a recurrence of pain and swelling in his left ankle. Amelioration of arthritic symptoms following reactions to gold has been reported by many observers.

COMMENT

It is to be noted that the patient experienced fever and meningeal symptoms after a relatively small amount of gold had been administered. Rawls and his associates [6] noted that of the patients in their series in whom toxic reactions to gold developed, in 50 per cent the reactions occurred before 100 mg. had been administered and in 86 per cent before 200 mg. had been given. Although no period is safe from the dangers of reactions, toxicity usually manifests itself after the first few doses in sensitive patients or toward the end of the course in patients who cannot tolerate the accumulation of gold.

The excellent effect of BAL in gold poisoning has been well established. Although spinal fluid abnormalities persisted for some time after the administration of BAL in this case, prompt subsidence in fever and improvement in symptoms followed its use.

SUMMARY

A case of meningitis occurring during the course of gold therapy for rheumatoid arthritis is reported. Because of the temporal relations between the administration of the gold and the development of symptoms, the clinical response to 2,3-dimercaptopropanol (BAL) therapy and the inability to prove another etiologic agent, gold must be considered as being the responsible factor.

6. Rawls, W. B., and others: Analysis of Results Obtained with Small Doses of Gold in Treatment of Rheumatoid Arthritis, Am. J. M. Sc. 207: 528, 1944.

Council on Foods and Nutrition

FOODS OF ANIMAL ORIGIN

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This paper was prepared at the request of the Council and is one of a series appearing in THE JOURNAL. *In the near future the entire series will appear in book form as the Council's Handbook of Nutrition.* JAMES R. WILSON, M.D., *Secretary.*

Animal foods play an important role in the diet of man. Nutritionally they are important sources of protein of good quality and excellent sources of vitamins and minerals. In addition, animal foods are in general more distinctive in flavor and texture and often more palatable than foods of vegetable origin. However, grains and their products and vegetables continue to constitute the bulk of the diets of most persons because of their lower cost. The feeding of grains to animals and consumption of them as animal products is uneconomical in certain respects, but many plant products can be consumed by human beings only after conversion through the animal. The customary combination of animal and vegetable foods is a sound practice nutritionally because of their supplementary relationship.

PROTEIN

Probably the most important contribution of animal foods to the human diet is the proteins (amino acids) they supply. The animal proteins generally are of high nutritive value, although two proteins found in connective tissue of meat, collagen (gelatin) and elastin, are deficient in the essential amino acid tryptophan and are low in methionine, cystine, tyrosine and isoleucine. The quantities of these proteins in lean meat are so small, however, that they have no pronounced effect on the over-all nutritive value of lean meat. The proteins of whole egg are highly digestible and almost perfectly utilized as shown in experiments with both animals and man. Whole egg has therefore been used as a standard with which to compare the amino acids from various foods or diets.[1]

The relative nutritive values of proteins are determined not only by the kinds and amounts of amino acids they contain, but also by their digestibility and availability to the body. Determination of digestibility and availability requires studies with man or animals in addition to in vitro digestion experiments; the amino acid content is determined chemically and biologically.

The approximate amino acid content of a number of animal foods and food products as assembled by Block and Mitchell [2] is given in table 1.[3] Data are provided, for comparison, on the amino acid content of wheat, leafy vegetables and soya bean flour. Given under the data of each protein are (*a*) the limiting amino acids in relation to the protein and the percen-

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2. Mitchell, H. H., and Block, R. J.: Some Relationships Between Amino Acid Contents of Proteins and Their Nutritive Values for the Rat, J. Biol. Chem. **163**: 599-620, 1946.

3. Additional Data: Lyman, C. M., and Kuiken, K. A.: The Amino Acid Composition of Meat and Some Other Foods, Bulletin 708, Texas Agricultural Experiment Station, 1949.

tage deficiency of whole egg, (*b*) biologic values, (*c*) the grams gain per gram of protein ingested (protein efficiency ratio) and (*d*) net utilization.

The limiting amino acids have been corroborated in some cases by experiments with rats. It has been shown that other acids may become limiting in turn after those in greatest deficiency are supplied. The extent to which a protein is deficient in a diet depends on the amount consumed. For example, in beef only cystine or methionine is limiting at the 10 per cent level.[4] At a 15 per cent level, or on the addition of cystine or methionine, the growth-promoting value of beef becomes equal to that of egg protein. The biologic values of the different kinds of muscle, liver and kidney are similar.

The general nutritive values or quality of proteins or mixtures of foods are usually expressed either as the ratio of gain in body weight to the protein consumed or as biologic values in terms of the percentage of the protein nitrogen utilized by the body. The product of the biologic value and the true digestibility gives a value for total utilization, or "net" utilization. Mitchell and Block [5] have found a good correlation between the various methods of expressing the nutritive value of proteins. They have suggested a method for scoring them based on the amino acids present in a protein as compared with the amino acids of the proteins of whole egg, which agrees well with the biologic values.

The value of one protein in supplementing the deficiencies of another is important in providing an adequate diet. It is the ability of the proteins of animal foods to supply lysine to meet the greatest deficiency of many vegetable foods, as well as the additional quantities of other acids and associated nutrients they contain, that has made them so nutritionally valuable in the diet.

The value of the proteins in pork and milk and of lysine as supplements to grain products is illustrated in a study with rats.[7] Equal parts of animal protein nitrogen from pork or milk and vegetable protein from whole wheat, white or rye flour gave as good growth as pork or milk alone. Mixtures of one-third animal protein and two-thirds vegetable protein gave nearly as good growth. The addition of 1 per cent of lysine to white flour had almost twice the effect on the growth of rats as that of the flour alone.

The need for a supplement to a diet varies with the quantity of protein consumed. A protein low in certain amino acids may be satisfactory when taken in quantities sufficient to supply the required amount of the limiting amino acids. This is true of both vegetable and animal proteins. Most animal proteins at the 10 per cent level are deficient in the sulfur-containing amino acids cystine and methionine and support less growth than whole egg protein at the same level.[4]

Beef protein is equal to egg protein, however, at the 15 per cent level or at the 10 per cent level if 0.2 per cent cystine or methionine is added. The addition of phenylalanine, leucine, iso-leucine, valine or tryptophan, which are also low in comparison with egg white, with methionine or all of them together did not improve beef protein. There is experimental evidence for the classic combination of ham with eggs.[8] Ham, fresh or cured, at the 10 per cent protein level contains insufficient cystine or methionine for optimum growth of rats. Combinations of equal parts of pork and whole egg or egg white protein or the addition of cystine or methionine to the pork gave growth approximating that

TABLE 1.—*Approximate Amino Acid Composition* of Certain Animal and Vegetable Proteins (Calculated to 16 per Cent Nitrogen) Together with Indexes of Nutritive Value†*

	Whole Egg	Whole Milk, Cow's	Beef	Liver	Casein	Collagen (Gelatin)	Leafy Vegetables	Whole Wheat	Soya Bean Flour
Arginine	6.4	4.3	7.7	6.6	4.2	8.7	7.0	4.2	7.1
Histidine	2.1	2.6	2.9	3.1	3.0	0.9	2.1	2.1	2.3
Lysine	7.2	7.5	8.1	6.7	7.9	5.8	5.7	2.7	5.8
Tryptophan	1.5	1.6	1.3	1.4	1.2	0.0	1.9	1.2	1.2
Phenylalanine	6.3	5.7	4.9	6.1	5.6	2.1	4.5	5.7	5.7
Tyrosine	4.5	5.3	3.4	4.6	6.9	0.7	5.4	4.4	4.1
Methionine	4.1	3.4	3.3	3.2	3.5	0.8	2.3	2.5	2.0
Cystine	2.4	1.0	1.3	1.4	0.3	0.1	2.0	1.8	1.9
Threonine	4.9	4.5	4.6	4.8	4.1	2.0	4.1	3.3	4.0
Leucine	9.2	11.3	7.7	8.4	9.9	3.1	6.6 ‡	6.8	6.6
Isoleucine	8.0	8.5	6.3	5.6	6.5	1.7	3.6 ‡	3.6	4.7
Valine	7.3	8.4	5.8	6.2	6.7	2.8	4.4 ‡	4.5	4.2
Glycine	2.2	2.3	5.0	...	2.1	24-30	...	...	...
Limiting amino acids	...	Cystine + methionine 32%	Cystine + methionine 29%	Isoleucine 30%	Cystine + methionine 42%	Tryptophan 100%	Isoleucine 55%	Lysine 63%	Methionine 51%
Biologic value	94	90	76	77	73	25	...	67	75
Protein efficiency ratio	3.8	2.9	3.2	2.7	2.2	...	...	1.5	2.3
Net utilization	94	86	76	75	68	24	...	61	72

* The approximate amino acid composition of a food may be obtained by application of the values in relation to the total nitrogen content. Thus if a sample of fat beef contains 12.5 per cent nitrogen, the amino acid value would be multiplied by 0.76 (12.2/16.0) to obtain the percentage composition of the amino acids.

† Data from Block and Mitchell.[5b]

‡ Alfalfa.

TABLE 2.—*Biologic Values and True Digestibilities of Food Proteins Determined in Man* [6]

	Biologic Value	True Digestibility
Egg, whole	97 (92-100)	96
Soya bean	81 (72-92)	89
Beef steak	84 (72-93)	97
Peanut	83 (67-95)	93
"Kitchen" yeast	87 (76-96)	87
Cottonseed	91 (82-103)	78

4. Hoagland, R.; Ellis, N. R.; Hankins, O. G., and Snider, G. G.: Supplemental Value of Certain Amino Acids for Beef Protein, J. Nutrition **35**: 167-176, 1948.

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of egg protein alone. The addition of cystine to this mixture or to the ham alone gave better growth than egg protein alone.

There is still much work to be done on the variations in the proteins themselves and on the effects of heat and chemicals on them. These factors plus digestibility, utilization and the time of ingestion (simultaneously or alternately) may modify the results predicted from amino acid composition.

Under certain conditions heat lowers the biologic value of animal and vegetable proteins. The change does not always modify the amino acid content as determined by hydrolysis or by feeding of the hydrolyzed protein. Lysine is particularly susceptible to combination or change by heat. Casein,[9] liver,[10] and the cake mixture of Block and his co-workers[11] are shown to have been modified by heat. The nutritive value was restored by the addition of a suitable amount of lysine.[11] The omission of one essential amino acid, except arginine, from a complete mixture of amino acids resulted in a failure to maintain weight and loss of appetite in rats.[12] Similar omission of essential amino acids in man resulted in negative nitrogen balances and loss of appetite.[13]

The interrelationship of nutrients in metabolism which is demonstrated in present day research in nutrition seems to reemphasize the desirability for each meal's being complete. The effects of a failure to supply the essential amino acids in the quantities and proportions required have been shown in studies with both animals and humans. Cannon and co-workers[14] and Wissler and co-workers[15] have shown that rats attain nitrogen balance when an adequate mixture of amino acids is fed at one time but display a negative balance if an inadequate mixture is fed and the missing amino acids are supplied later, even if fed at alternate hours. Similarly, it has been shown that when animal and vegetable proteins which supplement each other are fed together they support good growth, but when fed at different times in the day growth is retarded.[16] Leverton and Gram[17] found in human subjects that nitrogen utilization was affected by the distribution of protein in the diet. Subjects who received an adequate mixture of amino acids divided equally between three meals had a positive nitrogen balance, whereas those who ingested the same amount of amino acid mixture divided into two meals had a negative balance. For a full understanding of factors affecting protein metabolism in the human being more study will be required.

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CALORIES AND FAT

The energy value of animal foods is primarily related to the fat content. Most fresh animal foods have a high water content and when freed of external fat are relatively low in energy. It is therefore possible to change the fat content of most animal foods and thus their caloric value by mechanical separation of the fat-rich portion and thus to obtain protein products low or relatively low in fat, e. g., lean meat, skim milk and egg white. In fish the fat is deposited largely in the flesh. Some fish, such as haddock and cod, are always low in fat, while the fat content of others varies with the season. Mackerel, for example, are low in fat in the spring, 1 to 2 per cent fat, and high in summer, 6 to 17 per cent fat. Poultry flesh is also low in fat, the breast lower than the leg.

TABLE 3.—*Approximate Fat and Protein Content, per 100 Gm., of Animal Products Modified by Removal of Separable Fat or Low in Fat* *

		Total Edible Portion		Muscle Tissue (Lean) or Nonfat Portion		
Food	Subclass	Fat (Ether Ext.) Percentage	Separable Fat,† Percentage	Fat † (Ether Ext.) Percentage	Protein,† Percentage	Calories
Beef	Thin	14.0	18	3.2	20.1	109
	Medium	22.0	25	4.6	19.8	121
	Fat	28.0	31	5.7	19.6	130
	Very fat	39.0	41	7.7	19.1	146
Lamb	Thin	14.8	19	3.3	20.0	110
	Intermediate	27.7	26	5.7	19.6	130
	Fat	39.8	42	7.9	19.1	148
Pork	Thin	35.0	38	7.0	19.3	140
	Medium	45.0	47	8.8	18.9	155
	Fat	55.0	56	10.6	18.5	109
Veal	Thin	8.0	13	2.1	20.3	100
	Medium	12.0	16	2.8	20.1	106
	Fat	16.0	20	3.5	20.0	112
Poultry		10.9	..	...	....	...
	Breast	....	..	1.1	20.5	104
	Leg	....	..	4.4	20.1	120
Rabbit	Dressed	8.2	..	1.1	20.8	175
Fish	Cod (haddock)	....	..	0.4	16.5	70
Milk		3.8	3.9	...	....	...
	Skim	....	..	0.1	3.5	15
	Buttermilk	....	..	0.4	3.5	18
	Dry skim (whole dried)	26.0	..	1.0	36.8	156
Cheese	Cottage	....	..	0.8	19.2	84

* The unmodified foods are those referred to in Tables of Food Composition, United States Department of Agriculture.[18b]

† Estimated for the muscle tissue of the edible portion of the entire dressed carcass by equations developed by Callow.[19]

As an animal fattens the subcutaneous fat increases more rapidly than that in the muscle. Tables showing the composition of meats usually refer to edible meat, which is the combined muscle tissue and subcutaneous fat. Whether the fat is actually eaten depends on habit. There are times in choosing foods, evaluating diets or planning low fat diets when it is desirable to know the fat content of the lean meat itself as well as that of the whole cut. Table 3 gives the approximate fat content of the total edible portion as presented in the table of food composition of the United States Department of Agriculture.[18] The values given here have been calculated with equations developed by

18. (*a*) Chatfield, C., and Adams, G.: Proximate Composition of American Food Materials, United States Department of Agriculture Circular 549, 1940. (*b*) Bureau of Human Nutrition and Home Economics with National Research Council: Tables of Food Composition in Terms of Eleven Nutrients, Miscellaneous Publication 572, 1945. (*c*) Sherman, H. C.: Foods of Animal Origin, Handbook of Nutrition: A Symposium, Chicago, American Medical Association, 1943, chap. 13, p. 259.

Callow.[19] The values given refer to the total muscular tissue and are typical of the average lean meat portion of the carcass. In general for animals of the same degree of fatness, the muscle, or lean, tissue in beef is fatter than it is in mutton and in mutton fatter than in swine. This difference is due primarily to the fact that the amount of intermuscular fat ranks in the following order: beef, sheep and swine.

There is considerable variability in the fat content of the various commercial cuts of meat. The data in table 4 illustrate the variation in the fat content of cuts of lamb. Beef and lamb show similar variations in fatness of lean in relation to total fatness.[20]

The fat content of the muscle tissue of round of beef approximates that given in table 3 for the total muscle tissue of the carcass for the same degree of fatness. The fat content of the rib-eye muscle of these rounds, however, was 6 to 10 per cent higher. While the fat content of the rib-eye tends to be greater with increasing fatness of the carcass, this does not always hold. The fat content has been found to be from 5 to 10 per cent in animals of approximately the same over-all fatness. Analyses of the lean of fresh ham show that it is approximately 2 to 3 per cent lower than the fat content of pork muscle given in the table. Data are included in the table on the fat content of milk, fish and rabbit to indicate the possibility of obtaining a high protein, low fat diet from foods from these sources.

TABLE 4.—*Percentage of Ether Extract (Fat) in the Lean of Commercial Cuts of Lamb*

Grade	Total Carcass	Leg	Rib	Shoulder	Loin	Breast	Neck
1	36	7	20	16	11	14	16
2	26	6	16	11	11	11	11
3	22	6	14	12	9	9	8

Most natural animal fats contain the essential fatty acids, linoleic, linolenic and arachidonic acids.[21] The quantity present in the body and milk fat varies with the nature and amount of the feed given animals. They are present in most of the liquid plant oils. The body fats characteristic of animals when synthesized from carbohydrates and proteins and not derived from ingested fats are composed chiefly from palmitic, oleic and stearic acids.

In general, the fats of animal products are 97 to 99 per cent digestible. Variations in digestibility are related to the proportion of the long chain fatty acids with higher melting points, such as stearic, arachidic and palmitic acids, which are present in the natural fats or produced by hydrogenation of unsaturated fatty acids.[22] During the first four hours after ingestion, fats like butter and liver oil are found to be absorbed more rapidly than lard, corn oil or partially hydrogenated fat. In rats there was no difference in amount absorbed at the end of twelve hours. The effect of the presence of fat in the food, whether present in the natural food or added in preparation, on the rate of passage of food from the stomach is as important a factor in the utilization of fat in the diet as the digestibility.[23] Dietary calcium and magnesium also reduce the digestibility of fats.[24]

VITAMINS

Animal foods are generally good sources of the water-soluble vitamins of the vitamin B complex. Milk contains less thiamine and nicotinic acid than meat and more riboflavin than meats with the exception of lamb. When milk is used in the quantities required to supply the major source of calcium, it contributes a large proportion of the riboflavin necessary. Eggs are rich in riboflavin and thiamine and low in nicotinic acid, and, while eggs are used in relatively small quantities, they make a fair contribution to the total vitamin requirements. Liver and kidney are generally rich in all the vitamins of the B complex. Liver also contains nutrients known to be required by experimental animals but less well established for man. Fish is lower in the vitamin B complex than most meats or milk. Chicken is relatively rich in nicotinic acid.

Animal products contain vitamin A or carotene, the precursor of vitamin A. The fats of milk, eggs and liver are unusually rich in vitamin A. The natural yellow color of milk, generally higher in summer, represents carotene. The yellow of artificially colored butter, however, is not due to the presence of carotene, nor is the natural yellow of egg yolk. The yellow fats of cattle, which occur when the animals are fed on grass, are due to carotene, and hence such fats are better sources of vitamin A than white fats. Fat of cattle fed on grass contains 660 international units of vitamin A as compared with 33 of vitamin A in the fat of cattle on a low carotene ration. The fats in muscle or lean meat contains chiefly vitamin A rather than carotene.[25]

The quantity of vitamins in animal foods varies with the nature of the ration fed and in part with the breed or kind of animal, as was shown with regard to carotene. Pork tends to be richer in thiamine than other meats. The relative uniformity of the vitamin content of the products of the herbivorous animals results in part from the production of vitamins in the intestinal tract. The animal protein factor, which appears to be vitamin B_{12}, is, in part at least, produced by microorganisms in the intestinal tract.

The vitamin D content of both milk and eggs is determined by the kind of feed used or by exposure to sunlight. The concentration of vitamin D in both these foods and in butter is assured by incorporation of this vitamin in the feed or in the case of milk by irradiation or by addition of vitamin D to the milk. Margarines are usually fortified with vitamin A, carotene, or both in quantities to assure 15,000 international units per pound. When vitamin A is added the amount is stated on the label.

Many animal foods are good to excellent sources of water-soluble vitamins and other factors which have been identified but for which human requirements have not been established.

19. Callow, E.: Comparative Studies of Meat: I. The Chemical Composition of Fatty and Muscular Tissue in Relation to Growth and Fattening, J. Agricultural Sc. **37**: 113-129, 1944.

20. Bureau of Animal Industry, United States Department of Agriculture: unpublished data.

21. Burr, G. O., and Barnes, R. H.: Non-Caloric Functions of Dietary Fats, Physiol. Rev. **23**: 256-273, 1943.

22. Langworthy, C. F.: The Digestibility of Fats, J. Indust. Engin. & Chem. **15**: 276-278, 1923. Hoagland, R., and Snider, G. G.: Digestibility of Certain Higher Saturated Fatty Acids and Triglycerides, J. Nutrition **26**: 219-225, 1943. Holt, L. E., Jr.; Tidwell, H. C.; Kirk, C. M.; Cross, C. M., and Neale, S.: Studies in Fat Metabolism: Fat Absorption in Normal Infants, J. Pediat. **6**: 427, 1935. Cowgill, G. R.: Relative Nutritive Value of Animal and Vegetable Fats, Physiol. Rev. **23**: 664-686, 1945.

23. Steenbock, H.; Irwin, M. H.; Weber, J.: The Comparative Rate of Absorption of Different Fats, J. Nutrition **12**: 103-111, 1936.

24. Cheng, A. L. S.; Morehouse, M. G., and Deuel, H. J., Jr.: The Effect of the Level of Dietary Calcium and Magnesium on the Digestibility of Fatty Acids, Simple Triglycerides, and Some Simple Natural Hydrogenated Fats, J. Nutrition **37**: 237-250, 1949.

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INORGANIC ELEMENTS

Both animal and vegetable foods are good sources of phosphorus, and provision for adequate intake of the mineral is not a problem in the average diet. Phosphorus is associated with proteins, so that the phosphorus intake is roughly proportional to the protein intake.

Of the animal foods, milk and most milk products are particularly rich in calcium. Cheese and dried skim milk are rich in calcium and make an important addition to the calcium requirement when eaten as such or combined with other foods. Eggs, while fairly rich in calcium, are seldom eaten in sufficient amounts to supply a major part of the calcium requirement.

Neither meat nor fillet of fish are important sources of calcium. It is only when the bones of fish are consumed, as in canned sardines and salmon, and when such foods supply a major part of the protein that they make an important contribution to the calcium intake. In some countries dried and canned fish meals and fermented fish containing bones are important sources of calcium. Calcium is also obtained from the bones by some methods of cooking, and finely ground bone meal has been incorporated in canned ground meat or meat mixtures in some countries. A preparation of extremely finely divided bone is being used in the manufacture of some special foods and confections as a contribution both to texture and to greater calcium content.

Animal foods supply variable quantities of iron; where considerable quantities of meat and eggs are used, they may supply up to half of our daily requirement. Both milk and fish are low in iron. The iron content of animal foods is associated with the protein. The milligrams per hundred grams of protein are: meats 15 (varying from approximately 8 for pork and lamb, 12 for beef and veal, 25 for heart to 117 for kidney), eggs 24, fish 5.5 and milk 9.0.

PROCESSING AND STORAGE

Animal foods are processed to prevent deterioration, to facilitate transportation and storage and to provide a variety of attractive mixtures. The commonest methods of preservation involve heat, cold, drying and other deterrents to oxidation or bacterial growth. Canning, bottling and packaging are also used to provide mechanical protection of the food and to prevent oxidation, loss of moisture or contamination after processing. Each process modifies the character of the fresh material and may result in some loss of nutritive value.

Refrigeration is used to preserve food for limited periods of time. The introduction of quick freezing and low temperature storage makes it possible to keep foods safely in a state approximating fresh food for longer periods of time if protected against oxidation. Frozen foods are particularly vulnerable to bacterial contamination when thawed and allowed to stand at room temperatures. Frozen foods retain their nutritive value. There is a slight improvement in the tenderness of frozen meats, provided they have been held long enough before freezing for rigor mortis to disappear.[26]

The use of heat in canning and drying tends to reduce the nutritive value of animal foods, but, with a few exceptions, the changes that occur with modern methods of processing are approximately of the same magnitude as those that occur in home preparation. The extent of the changes depends on the time and temperature of heating. The average losses in nutritive value of the diet during the processes of food preparation and service have been estimated to be: thiamine 40 per cent, riboflavin 15 per cent, nicotinic acid 20 per cent and ascorbic acid 35 per cent. In the case of vitamins, the losses in quality of canned or dried foods occurring during long storage and the subsequent reheating at the time of use may be greater than those in the original processing. There may also be loss of quality during storage at high temperatures for a long time.

The nutritive value of the proteins of animal foods is not seriously affected by the ordinary methods of food preparation or sterilization in canning, according to results obtained with rats. Some decrease in the biologic value has been demonstrated as indicated in the discussion of proteins. The effects of baking and toasting on the nutritive value of a protein mixture made into a cake have been reported.[11] Here the mix consisted of flour, sugar, egg white, lactalbumin, hydrogenated vegetable oil, dried yeast, molasses and salt with 25 per cent of the calories from protein. The mix had a high protein efficiency, 3.3 to 3.5, but the value decreased to 2.5 when the cake was baked. When the cake was dried in the oven over night the protein efficiency fell to less than 1.5, and when slices of the cakes were toasted 40 to 60 minutes, until they had the appearance of commercial rusk, the value became less than 0.7. The changes involved chiefly the availability of lysine, for when 0.63 per cent lysine was added to the toasted cake the initial nutritive value was practically restored. A study of the possible effect of nitrite used in curing meats on the destruction or inactivation of lysine was made in relation to pork luncheon meat.[27] There was no loss of lysine in cooking (canning) of fresh meat, but there was a loss of 12 per cent of lysine in the cooked-cured meat. When the fresh, canned-uncured and canned-cured meats were fed at a level at which lysine was the limiting nutrient, there were no significant differences in the growth of rats, thus indicating that such inactivation or destruction of lysine as occurred was not sufficient to be detected in feeding experiments.

Experiments with lactalbumin and mixtures of amino acids indicate that the lowered nutritive value due to heating, either dry in the oven or moist in the autoclave, may affect the availability of the protein rather than inactivation of lysine.[28] Pure lysine was, however, not affected by the temperatures used when heated alone or in a mixture of the essential amino acids. In this case the change was produced at a lower temperature and in less time when the protein was heated in the autoclave than when heated in a dry oven. There is a slight reduction in lysine from 8.9 to 7.8 Gm. per hundred grams in the heat processing of evaporated milk.[29]

There is considerable evidence that the ordinary processes of cooking and processing of foods for human consumption do not seriously affect the nutritive value of the proteins in the amounts used in the average mixed diet. The results of changes in the amounts used in the nutritive value of canned meats [30] and milk [31]

26. Hankins, O. G., and Hiner, R. L.: Freezing Makes Beef Tenderer, Food Industries **12**: 49-51, 1940.

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29. Hodson, A. Z., and Kreuger, G. M.: Essential Amino Acid Content of Casein and Fresh and Processed Cow's Milk as Determined Microbiologically on Hydrolysates, Arch. Biochem. **10**: 55, 63, 1946.

30. Rice, E. E., and Robinson, H. E.: Nutritive Value of Canned and Dehydrated Meat and Meat Products, Am. J. Pub. Health **34**: 584-592, 1944.

31. Knott, E.: Thiamine Content of Milk in Relation to Vitamin B_1 Requirement of Infants, Am. J. Pub. Health **32**: 1013, 1942.

are not pronounced with respect to their biologic values. There is, however, no experimental evidence as to the effect of processing on the protein of canned and dried animal foods when used as supplements to vegetable foods over long periods of time, such as could occur under unusual conditions.

The manufacture of digests or hydrolysates of proteins for special feeding or for intravenous injection is an important phase of animal food processing. Studies of amino acid requirements of man and animals have shown that such mixtures are utilized and may have biologic values approximating those of the proteins from which they are made.[32] The developments in amino acid requirements will enable manufacturers to correct partial shortages in amino acids and to improve the relations between them to obtain the greatest efficiency of utilization on intravenous injection.

Considerable losses in the vitamin content of processed animal foods occur in home preparation and processing and in subsequent storage. Thiamine and pantothenic acid are both soluble in water and destroyed by heat. The losses are greater at high temperatures and increase with the length of time of heating or storage or when kept warm for a period before serving. The vitamin losses in meats in dehydration and canning are approximately as follows: thiamine 30 to 40 per cent, riboflavin 0 to 10 per cent, nicotinic acid 0 to 10 per cent and pantothenic acid 20 to 30 per cent.[30] Canned pork and dehydrated beef and pork show little further loss in riboflavin, nicotinic acid or pantothenic acid during storage for seven months at 99 F. Slow losses of riboflavin and pantothenic acid occur in storage at 120 F. Thiamine shows some further loss in storage at 80 F. and may be half gone in seven months, while at higher temperatures and/or long storage it is almost completely lost.

The thiamine content of milk is reduced in evaporating and storage.[31] It is reduced 23 to 35 per cent during evaporation and canning and may lose another 50 per cent on storage for a year.

When canned or processed foods are recooked, as is too often the practice, and held at a warm temperature a long time before being eaten as is sometimes done in restaurant and hospital kitchens, there are further losses in thiamine in addition to those which have already occurred.

The importance of the deterioration in nutritive value of animal foods during home preparation and in processing depends on the contribution to the diet expected of them and on the quantities in which they are consumed. The basic concern is with the attainment of nutritive requirements under the conditions which exist, and one must measure the whole diet by this yardstick rather than consider changes in some foods without relation to the other foods consumed. Processed foods will continue to be valuable foods and, as with proteins, the changes which occur in them are not sufficient to produce an inadequate diet in the quantities ordinarily consumed. Likewise, with regard to losses of thiamine, if suitable quantities of enriched bread or potatoes or low extraction grain products are used the diet may still be adequate. One must keep in mind, however, that losses in nutritive value during processing and food preparation could be serious under some conditions.

32. Albanese, A. A.; Holt, L. E., Jr.; Davis, V. I.; Snyderman, S. E.; Lein, M., and Smetak, E. M.: The Biological Value of Meat Hydrolysate in the Infant, J. Nutrition **36**: 133-138, 1948. Albanese, A. A.; Holt, L. E., Jr.; Troy, V.; Snyderman, S. E., and Lein, M.: Studies on Protein Metabolism in the Infant: The Comparative Biological Value of Some Milk Protein Preparations, Bull. Johns Hopkins Hosp. **80**: 149, 1947.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

R. T. Stormont, M.D., *Secretary.*

VITAMIN B_{12}-U.S.P.—Cobione (Merck).—Crystalline Vitamin B_{12}.—"Vitamin B_{12} is a cobalt-containing substance usually produced by the growth of suitable microbial organisms, or obtained from liver. When assayed by the method described below, it has a purity of not less than 95 per cent, calculated on the anhydrous basis."-*U.S.P.*

Crystalline vitamin B_{12} is slowly inactivated in solutions of strong acids or alkalis, but in saline solution it withstands autoclaving for 15 minutes at 121 C. If kept under sterile conditions, the drug in isotonic saline solution can be stored at room temperature for more than a year without significant loss of therapeutic activity.

For description and standards see the U. S. Pharmacopeia under Vitamin B_{12} and Vitamin B_{12} Injection.

Actions and Uses.—Crystalline vitamin B_{12} possesses hemopoietic activity apparently identical with that of the anti-anemia factor of liver. However, it has not been established as the complete or essential counterpart of that substance. Studies thus far indicate it to be clinically efficacious in the treatment of pernicious anemia with or without neurologic complications, and also in the treatment of tropical and nontropical sprue, nutritional macrocytic anemia due to vitamin B_{12} deficiency and certain cases of megaloblastic anemia of infancy. The drug is particularly useful in the treatment of patients who are sensitive to liver extract. The follow-up of patients treated for spinal cord lesions associated with pernicious anemia has not yet been of sufficient duration to warrant a definite statement as to its value as compared with liver extract in this long term therapy. The effects of crystalline vitamin B_{12}, thus far observed, however, have been equally good.

Animal experiments have shown no evidence of toxic effects, either local or systemic, from oral or subcutaneous administration of crystalline vitamin B_{12}, and no toxic reactions in man have been reported.

Concentrates of vitamin B_{12} are also available in varying degrees of purity. They do not necessarily comply with all the specifications set forth here, but may be suitable for parenteral use.

Dosage.—Crystalline vitamin B_{12} is extremely potent, and while data are as yet insufficient to warrant exact estimates of the minimum or optimum effective dosage, the minimum is believed to be approximately 1 microgram per day, or multiples of this amount at corresponding intervals, e. g., 15 micrograms every two weeks. One microgram of the drug is estimated to be about equal biologically to one U.S.P. "injectable" unit of liver extract, but further study is necessary to determine accurately the comparative clinical potency of these two agents.

The dosages recommended for parenteral administration are as follows: In uncomplicated pernicious anemia, 15 micrograms once or twice a week until remission occurs, then a maintenance dose of 15 micrograms every other week. In pernicious anemia with neurologic complications, 15 to 30 micrograms once or twice a week until remission occurs, then a maintenance dose of 15 micrograms every other week. In sprue, 15 to 30 micrograms once or twice a week will usually induce remission, but 15 micrograms once a week thereafter is often necessary to prevent relapse. In megaloblastic anemia of infancy, the same dosage is recommended as for sprue, but if this is not promptly effective, treatment with folic acid or other therapy should be instituted without delay. In nutritional macrocytic anemia, a single dose of 15 micrograms is usually sufficient to produce a favorable initial response, but it may sometimes be necessary to repeat this dose at two week intervals to prevent relapse.

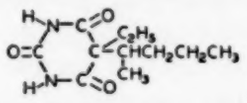
Recent studies dealing with oral administration indicate that satisfactory responses are usually obtained when high doses are employed. Most patients respond slowly to oral doses of vitamin B_{12} which are by weight 30 to 60 times the size of those used in parenteral therapy. It appears that this quantity can be greatly reduced when the vitamin is administered with normal gastric juice.

Doses of vitamin B_{12} greatly in excess of those recommended should not be given over long periods until further study has eliminated the possibility of toxic effects from such high dosage.

MERCK & COMPANY, INC., RAHWAY, N. J.

Solution Cobione: 1 cc. ampuls: A saline solution containing 15 micrograms of vitamin B_{12} in each cc.

PENTOBARBITAL.—Nembutal (ABBOTT).—5-Ethyl-5-(1-methylbutyl)-barbituric acid.—$C_{11}H_{18}N_2O_3$.—M.W. 226.27.—The structural formula of pentobarbital may be represented as follows:



Actions and Uses.—Pentobarbital is one of the short-acting derivatives of barbituric acid. The acid has the same actions and uses as the more widely employed sodium salt. See the monograph on Pentobarbital Sodium.

Dosage.—Pentobarbital is administered in dosage equivalent to that of pentobarbital sodium: 0.11 Gm. of pentobarbital is approximately equivalent to 0.12 Gm. of pentobarbital sodium.

Pentobarbital is marketed in the form of an elixir designed for the preoperative sedation of children: 1 to 2 years, 30 mg.; 2 to 3 years, 60 mg.; 3 to 7 years, 0.1 Gm.; 7 to 10 years, 0.12 Gm. These doses are usually administered 45 minutes before operation.

Tests and Standards.—

Physical Properties: Pentobarbital is a white, granular powder. It is freely soluble in alcohol, chloroform and ether, and slightly soluble in water. It dissolves in solutions of alkali hydroxides. It melts between 126 and 130 C.

Identity Tests: Add 1 drop of sodium hydroxide T.S. to 10 ml. of water. Saturate the solution with pentobarbital and filter off the excess. Divide the filtrate into two portions. To one portion add 1 ml. of mercury bichloride T.S.: a white precipitate forms. To the other portion add 5 ml. of silver nitrate T.S.: a white precipitate forms, which is soluble in excess ammonia T.S.

Purity Tests: Dissolve about 0.5 Gm. of pentobarbital in 5 ml. of sulfuric acid: the solution has no more color than matching fluid A (*U.S.P. XIII*, p. 680) (*absence of readily carbonizable substances*).

Dry about 1 Gm. of pentobarbital, accurately weighed, for 2 hours at 105 C.: the loss in weight is not more than 1 per cent.

Ash about 1 Gm. of pentobarbital, accurately weighed: the residue is not more than 0.1 per cent.

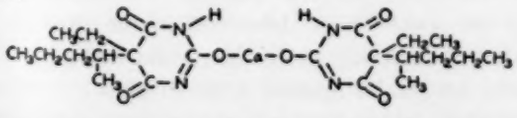
Assay: Transfer about 0.4 Gm. of pentobarbital, accurately weighed, to a separatory funnel and dissolve it in 25 ml. of sodium hydroxide T.S. Acidify the solution with diluted hydrochloric acid and extract with 25 ml. portions of chloroform (usually 7 portions are adequate). Test for completeness of extraction by extracting the aqueous layer with 10 ml. of chloroform and evaporating the solvent in a tared dish: no more than 0.5 mg. of residue is present. Wash the combined chloroform extracts with two 5 ml. portions of water. Extract the water washings with two 5 ml. portions of chloroform and add them to the original chloroform extract. Filter the combined extracts through a pledget of cotton into a tared beaker, and wash the separatory funnel and filter with several small portions of chloroform. Evaporate the chloroform on a steam bath in a current of air, add 10 ml. of ether to the residue, reevaporate and dry the residue for 2 hours at 105 C. The amount of pentobarbital present is not less than 98.5 per cent.

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

Elixir Nembutal: 118.3 cc., 473 cc. and 3.78 liter bottles: A 25 per cent alcohol solution containing the equivalent of 4 mg. of pentobarbital sodium in each cc.

U. S. trademark 285,003.

PENTOBARBITAL CALCIUM.—Nembutal Calcium (ABBOTT).—The calcium salt of 5-ethyl-5-(1-methylbutyl)-barbituric acid.—$C_{22}H_{34}CaN_4O_6$.—M.W. 490.60.—The structural formula of pentobarbarbital calcium may be represented as follows:



Actions and Uses.—Pentobarbital calcium shares the actions and uses of pentobarbital sodium. It has no advantage except that it is better suited for making compressed tablets and may be used when there is reason to avoid sodium. See the monograph on Pentobarbital Sodium.

Dosage.—Pentobarbital calcium is prescribed in the same dosage as is pentobarbital sodium. It is available in tablets rather than in capsules.

Tests and Standards.—

Physical Properties: Pentobarbital calcium is a very fine, white powder. It is sparingly soluble in alcohol and water, and practically insoluble in ether.

Identity Tests: Dissolve 0.2 Gm. of pentobarbital calcium in 10 ml. of water and divide the solution into two portions. To one portion add 1 ml. of mercury bichloride T.S.: a white precipitate forms. To the other portion add 5 ml. of silver nitrate T.S.: a white precipitate forms, which is soluble in excess ammonia T.S.

Pick up a small amount of pentobarbital calcium with a loop of platinum wire, moisten the powder with diluted hydrochloric acid and heat the loop in a colorless flame: a transient, yellow-red color is produced (*presence of calcium*).

To 5 ml. of a saturated solution of pentobarbital calcium (about 0.1 Gm.), add 5 ml. of ammonium oxalate T.S.: a white precipitate forms (*presence of calcium*).

Purity Tests: Dissolve 0.5 Gm. of pentobarbital calcium in 5 ml. of sulfuric acid: the solution has no more color than matching fluid A (*U.S.P. XIII*, p. 680) (*absence of readily carbonizable substances*).

Dissolve 1 Gm. of pentobarbital calcium in 40 ml. of water. Acidify the solution with 10 ml. of 1 *N* hydrochloric acid and filter after it has stood several minutes. Saturate the filtrate with hydrogen sulfide: no color or precipitate forms (*absence of salts of heavy metals*).

Dry about 1 Gm. of pentobarbital calcium, accurately weighed, for 2 hours at 105 C.: the loss in weight is not more than 7 per cent.

Assay: (Pentobarbital) Add about 0.5 Gm. of pentobarbital calcium, accurately weighed, to 40 ml. of water in a separatory funnel and acidify the mixture with 5 ml. of diluted hydrochloric acid. Proceed as directed in the assay in the monograph for Pentobarbital starting with, " . . . and extract with 25 ml. portions of chloroform . . ." Each Gm. of pentobarbital formed is equivalent to 1.084 Gm. of pentobarbital calcium. The amount of pentobarbital calcium present is not less than 97.5 nor more than 102.5 per cent.

(Calcium) Transfer about 0.4 Gm. of pentobarbital calcium, accurately weighed, to a 400 ml. beaker and dissolve it in 100 ml. of hot water. Add 1 ml. of hydrochloric acid and heat to boiling. Add, with stirring, about 10 ml. of hot ammonium oxalate T.S. Add 2 drops of methyl red T.S. and make the solution alkaline with ammonia T.S. Heat the beaker on a steam bath for 2 hours, filter the mixture through a Gooch crucible and wash the precipitate thoroughly with hot water. Place the Gooch crucible and precipitate in the beaker used for the precipitation, add 100 ml. of hot water and 10 ml. of diluted sulfuric acid, and heat the beaker to 70 C. Titrate the solution with 0.1 *N* potassium permanganate to the first permanent pink color. Each ml. of 0.1 *N* potassium permanganate is equivalent to 0.02004 Gm. of calcium. The amount of calcium present is not less than 8.0 nor more than 8.3 per cent.

PENTOBARBITAL CALCIUM TABLETS: *Identity Tests:* Grind a number of tablets equivalent to about 0.1 Gm. of pentobarbital calcium to a fine powder and suspend it in about 25 ml. of water in a separatory funnel. Add 2 ml. of diluted hydrochloric acid and extract the acid liberated with 50 ml. of chloroform. Filter the chloroform through a pledget of cotton into a beaker and evaporate the chloroform to dryness. Dry the residue in an oven at 105 C. The pentobarbital formed melts between 126 and 140 C.

Assay: Accurately weigh 20 tablets and grind them to a very fine powder. Transfer a sample equivalent to about 0.2 Gm. of pentobarbital calcium, accurately weighed, to a 100 ml. Kjeldahl flask. Add about 1 Gm. of a powdered mixture of 10 parts of potassium sulfate and 1 part of cupric sulfate as a catalyst. Add 8 ml. of concentrated sulfuric acid and 1 ml. of 30 per cent hydrogen peroxide, and digest the sample.

Place the Kjeldahl flask in a steam distillation apparatus, add excess 40 per cent sodium hydroxide and distil the ammonia over into a receiver containing 25 ml. of saturated boric acid. Using a mixed indicator (1:5 methyl red T.S. and bromocresol green T.S.), titrate the ammonia liberated with 0.1 *N* hydrochloric acid. Each ml. of 0.1 *N* hydrochloric acid is equivalent to 0.001401 Gm. of nitrogen. The amount of nitrogen present is not less than 10.3 nor more than 12.6 per cent, corresponding to not less than 90 nor more than 110 per cent of the labeled amount of pentobarbital calcium.

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

Enterab Tablets Nembutal Calcium: 50 mg. and 0.1 Gm. enteric coated.

Tablets Nembutal Calcium: 30 mg., 50 mg. and 0.1 Gm.

U. S. trademark 285,003.

THIAMINE HYDROCHLORIDE (See New and Nonofficial Remedies 1949, page 549).

The following dosage forms have been accepted:

ENDOCRINE COMPANY, NION CITY, N. J.

Aqueous Solution Thiamine Hydrochloride Drops: 15 cc., 30 cc. and 118.3 cc. bottles: A solution containing 50 mg. of thiamine hydrochloride in each cc.

LINCOLN LABORATORIES, DECATUR, ILL.

Tablets Thiamine Hydrochloride: 10 mg.

TYROTHRICIN (See New and Nonofficial Remedies 1949, page 71).

The following dosage form has been accepted:

S. B. PENICK AND COMPANY, NEW YORK

Solution Tyrothricin 4%: 200 cc. and 500 cc. vials: A 23 per cent alcoholic solution containing 40 mg. of tyrothricin in each cc.

SULFAMERAZINE (See New and Nonofficial Remedies 1949, page 139).

The following dosage form has been accepted:

PHYSICIANS' DRUG AND SUPPLY COMPANY, PHILADELPHIA

Tablets Sulfamerazine: 0.5 Gm.

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EXPERIMENTAL STUDIES ON ETIOLOGY OF ATHEROSCLEROSIS

Medical statistics show that today heart disease is the commonest cause of death in this country and that atherosclerosis is undoubtedly a primary causative factor in the majority of cardiac fatalities. This fact has focused an increasing amount of attention by basic medical scientists on the etiology of atherosclerosis. Many theories have been advanced in the past several decades to explain the deposition of lipids, shown many years ago to be principally cholesterol and cholesterol esters,[1] in the intima of the aorta and in other arterial walls. The dietary intake of cholesterol, obesity and age have at various times been suggested as primary causative factors by some workers but disclaimed with equal vigor by others. Recent experimental studies appear to agree that fundamental causative factors include the plasma concentration of cholesterol and perhaps other lipids; the blood pressure; perhaps a "tissue factor," such as chondroitin-sulfuric acid or other carbohydrate sulfate esters, in the arterial intima,[2] and the number and size of the chylomicrons in the plasma.

Several current studies have emphasized the etiologic significance of the number and size of the plasma chylomicrons. Moreton,[3] who stresses this point of view, postulates that the physical state and particle size of the plasma lipids, rather than their concentration, is the clue to the underlying etiology of atherosclerosis. In support of this view, the Utah investigator has reported that the chylomicrons present in the plasma after a fatty meal are much larger than those found in normal fasting plasma or in plasma after a fat-free meal. The theory is therefore proposed that "the cumulative effect of many fatty meals over a lifetime, by producing these transient showers of large lipid particles in the plasma, may be the underlying cause of the intimal lipid deposition in human atherosclerosis." It is believed that the larger-sized lipid particles are entrapped in the intima of the artery between the overlying endothelium and the underlying barrier of the fenestrated internal elastic membrane. Smaller-sized chylomicrons are presumably not thus retained. The retained chylomicron there is believed to act as a stimulus to phagocytosis in the intima by macrophages and to the formation of "foam cells." Further, it is postulated, the neutral fats and fatty acids are gradually absorbed and removed, leaving behind the less soluble residue of cholesterol and its esters and thus forming the atherosclerotic lesion. In further support of this hypothesis, Moreton[4] cites the previous claim[5] that the repeated intravenous injection of aqueous solutions of pectin, gum acacia, methyl cellulose or polyvinyl alcohol—all large colloidal particles or "macromolecules"—results in their gradual accumulation in the arterial intima of experimental animals (dogs, rabbits and rats).

Two current studies likewise appear to support the thesis that lipid macromolecules play a role in the development of atherosclerosis. One of these[6] stresses the frequency of hyperchylomicronemia in older age groups and suggests its relation to the incidence of atherosclerosis in older persons. The other[7] reports the presence of macromolecules, primarily cholesterol-protein complexes, in the plasma of rabbits given cholesterol and of 104 patients with myocardial infarctions. These important observations merit further careful and critical study, since they appear to offer a logical and convincing explanation of the deposition of lipids in the atherosclerotic arterial intima.

CONSENT TO OPERATIONS

Lawful authority for the physical examination of a patient, an operation or local treatment arises only out of a legal duty or out of the consent of the patient or someone authorized to act on his behalf. Lawful authority arising out of legal duty concerns only officers of the government while acting within the scope of the authority vested in them by law, such as a physician authorized under the eugenic sterilization law of his state to sterilize the inmates of a state institution. Lawful authority for the physical examination of a patient, an operation or treatment, in the absence of a legal duty, is nothing more than valid consent. Consent may be invalid because it undertakes to authorize an unlawful act or an act contrary to public policy, because it comes from a person who has no lawful right to give consent or because it was obtained by misrepresentation or fraud.

1. Windaus, A.: Ueber den Gehald Normalen und Atheromatösen Aorten an Cholesterin und Cholesterinestern, Ztschr. f. physiol. Chem. **67**: 174, 1910.
2. Faber, M.: The Human Aorta: Sulfate-Containing Polyuronides and the Deposition of Cholesterol, Arch. Path. **48**: 342 (Oct.) 1949.
3. Moreton, J. R.: Atherosclerosis and Alimentary Hyperlipemia, Science **106**: 190 (Aug. 29) 1947.
4. Moreton, J. R.: Physical State of Lipids and Foreign Substances Producing Atherosclerosis, Science **107**: 371 (April 9) 1948.
5. Hueper, W. C.: Arteriosclerosis, Arch. Path. **39**: 117 (Feb.) 1945.
6. Becker, G. H.; Meyer, J., and Necheles, H.: Fat Absorption and Atherosclerosis, Science **110**: 529 (Nov. 18) 1949.
7. Gofman, J. W., and others: The Role of Lipids and of Lipoproteins in Atherosclerosis, Science **111**: 166 (Feb. 17) 1950.

Consent may be implied by the circumstances of the case and may be given by word of mouth or in writing. All forms of consent are equally binding, but the consent should be in writing, if possible, to avoid misunderstanding and to facilitate proof of consent. A patient of mature years and sound mind who knows he is at liberty to submit to or refuse an examination, operation or treatment, who knows or is fairly and fully informed by his physician as to the procedure to be undertaken and who then cooperates with the physician in bringing it about has impliedly consented to it, even though he has not consented in words. Such implied consent is that customarily given in everyday practice, especially with reference to minor procedures. And it is under the legal concept of implied consent that a physician is permitted in an emergency to operate on a delirious or unconscious person who is unable to determine for himself or have determined for him by his representative whether an operation shall or shall not be performed.

Oral consent is probably the commonest form of consent, often being supplemented by implied consent; that is, after the patient gives his oral consent he cooperates with the physician in the performance of the examination, operation or treatment. Oral consent, however, is open to misunderstanding and may be difficult of proof. Written consent is by far the safest, for it permits a clear record of the nature and extent of the operation that is authorized. No particular form is necessary to give validity to written consent to an operation. The essential requirements are that it state clearly the nature and extent of the operation that is authorized and that it be signed by a person legally qualified to give consent. An adult person of sound mind and in possession of his faculties may give consent for himself; the parent or person standing *in loco parentis* may give consent for a minor, and the guardian or legal representative of an incompetent person may give consent for his ward. Friendship, no matter how intimate, confers no such authority on a friend.

To represent to a patient that an operation is necessary to save life or to preserve health when that is not the case, that it is less severe or extensive than it is, that it will give greater relief than there is any reasonable prospect of its giving or that there is less danger in the operation than in fact exists is to perpetrate a fraud on the patient which vitiates his consent. Tactful honesty and frankness on the part of the physician are essential.

A twenty-two page pamphlet prepared by the Bureau of Legal Medicine and Legislation, which discusses the several medicolegal aspects relating to consents to examinations, treatments, operations and autopsies, and which includes suggested forms for consent, may be obtained from the Order Department of the American Medical Association for the nominal price of 10 cents.

MALARIA CONTROL ACTIVITIES OF THE WORLD HEALTH ORGANIZATION

The long range objective of WHO with regard to malaria, according to Paul F. Russell,[1] is the worldwide eradication of this disease as a public health problem. The immediate objectives are (1) to prove to governments the economic feasibility of malaria control, (2) to demonstrate the indirect benefits accruing to general public health and welfare and in increased agricultural and industrial production and (3) to assist and encourage governments toward nationwide control and eradication of malaria by well organized, routine application of modern technics. The present policy of WHO includes certain practical health services to governments which request them. Experienced malariologists and/or demonstration malaria control teams are made available to give advice and practical assistance in setting up national antimalaria services and in training local personnel. This help is usually planned for not less than two years in the case of demonstration teams. Governments are required to appoint local officers to understudy each member of such a team, which usually includes a malariologist, an entomologist and an engineer.

Schools of malariology are assisted in establishing malaria courses in selected areas where such facilities are required. WHO fellowships and travel grants for training in malariology are provided. WHO is preparing to collect, correlate and disseminate malaria data, to standardize technics and measurements and to collect and distribute aids to malaria control propaganda for public instruction.

WHO is cooperating with UNICEF (United Nations International Children's Emergency Fund) in the Far East in attempts to reduce infant and child mortality and morbidity by malaria control. WHO is also cooperating with FAO (Food and Agriculture Organization) in the selection of malarious areas of great food-producing potentiality, in order to demonstrate the agricultural benefits which may be derived from effective malaria control.

The extent of the activities of WHO with regard to malaria control program can be gleaned from the fact that during 1949 malaria control programs were carried out in cooperation with sixteen individual governments: One demonstration malaria control team was sent to Pakistan and four to India; survey teams were established, one in Siam and one in Afghanistan; short term malaria consultants were sent to Bulgaria, Yugoslavia, Hungary, Turkey, Greece, Israel, India, Iran, Ceylon, Mexico, Venezuela and in the United States. Twenty-eight fellowships for basic or advanced malaria training and a panel of some 46 malaria experts were established. The Expert Committee on Insecticides of WHO held its first meeting in Sardinia in May 1949.

1. Russell, P. F.: Malaria Control Activities of the World Health Organization, J. Nat. Malaria Soc. 9:1 (March) 1950.

The malaria program has been assigned first priority along with tuberculosis, venereal diseases, infant and maternal hygiene and environmental sanitation. The development of insecticides since 1940 makes it feasible anywhere in the world to attain a high degree of control. Antimalarial programs are now well advanced in many areas, so that it is probable that malaria could be eradicated, barring worldwide conflicts, as an endemic disease within the next few years.

AM I AN ENEMY OF ANIMALS?

Under the title "Am I an Enemy of Animals?" Albert H. MacCarthy, president of the Anne Arundel County Society for the Prevention of Cruelty to Animals and formerly president, treasurer and board member of the Maryland Animal Welfare Association, Inc., writes with conviction of his belief that animal experimentation and medical progress are inextricably entwined.[1] He has been and is closely associated with the welfare of animals, and when he claims that a large percentage of animal welfare society members are convinced as he is that animal research is beneficial and necessary his words can be heeded as truly representative of many in this group. This attitude should serve as an example to others who see less clearly the need for such experimental research. Certainly Mr. MacCarthy and his fellow believers are not enemies of animals because they wish to encourage medical progress for the benefit of human beings and animals; their record can attest to this.

MacCarthy states that these facts should be admitted:

> Live animals are needed for medical research and a reasonably certain supply must be had to efficiently carry on instruction in the rapidly expanding medical classes and research work on problems vital to mankind as well as to animals.
>
> The lower order of animals should always be used whenever they are available and suitable for the work being carried on, and cats and dogs should be used only when found actually necessary.
>
> There is urgent need for . . . the use of cats and dogs for school instructions of students and research work.
>
> A large number of cats and dogs are uselessly destroyed at public pounds.
>
> Without an adequate legally authorized supply of animals for the needs of schools and laboratories, cat and dog stealing will continue to be prevalent in many communities. . . .
>
> Cats and especially dogs are the most suitable and necessary animals for use in certain critical research problems because of the similarity of the circulatory system and other functions with those of mankind.

MacCarthy also answers several specific questions, such as those concerned with whether schools and laboratories should raise their own supply of animals, surrender of animals from a public pound, legalization of supply of animals, openness of animal farms and laboratories to inspection and humane attitude of physicians and researchers toward animals. He concludes that medical teaching and research should be helped rather than hindered and offers excellent reasons for his belief. The near-sighted advocates of prevention of all animal research would do well to read and heed this paper by one whose avocation is protecting the welfare of animals.

1. MacCarthy, A. H.: Am I an Enemy of Animals? Bull. Nat. Soc. M. Research 4:8 (March-April) 1950.

PREGNANCY IN DIABETES

Pregnancy in a diabetic patient involves hazards encountered only occasionally in a nondiabetic woman. The hazards in the order of their importance are the high incidence of toxemia, large size of infants, urinary tract infection and pneumonia, prolonged labor, difficult delivery because of excessive size of the infant, increased incidence of postpartum hemorrhage and postpartum infections of the mother, such as intrauterine infection and pyelitis, and increased mortality and morbidity of infants.

Given and his associates, Douglas and Tolstoi,[1] of the New York Hospital and Cornell Medical College presented an analysis of 131 pregnancies occurring in 106 diabetic women, 35 of whom were primigravid and 71 multigravid. The previous histories of the 71 multigravid patients included data on 243 pregnancies, of which 62 per cent terminated with living infants, 13 per cent with abortion, 7 per cent with induced abortion and 18 per cent with the delivery of infants born dead or dying during the neonatal period. Toxemia was present in 46 per cent of patients and ketoacidosis in 16.8 per cent.

Data assembled on the group of 71 multigravid and 35 primigravid patients are of special interest because antepartum management differed from that employed by others, in that the authors did not use hormonal therapy or attempt strict chemical control of the diabetes. The authors strove for clinical rather than chemical standards of control. They were able to establish in their clinical experience since 1936 that when protamine zinc insulin or a mixture of protamine and regular insulin were used it was not essential that the patient have a sugar-free urine or that the blood sugar values be brought to normal levels as long as the patient was maintaining or gaining weight, had none of the symptoms of diabetes and did not have ketonuria. In the group so treated fetal mortality was 21.4 per cent, the incidence of toxemia was 46 per cent and ketoacidosis amounted to about 19 per cent (20 patients). Maternal morbidity was 17 per cent; 30.6 per cent of the infants weighed over 4,000 Gm., and over 50 per cent weighed more than the average clinical weight of 3,250 Gm.

According to Given, Douglas and Tolstoi comparison of these figures with those of others suggests that the clinical technic of the authors is applicable to the management of the pregnant patient with diabetes. Hyperglycemia, a usual concomitant of this method, did not appear to be contributory to the large size of the infant, the greater incidence of toxemia, ketoacidosis and infant mortality.

1. Given, W. P.; Douglas, G., and Tolstoi, E.: Pregnancy and Diabetes, Am. J. Obst. & Gynec. 59:729-747 (April) 1950.

WASHINGTON NEWS

(From the American Medical Association Washington Office)

Compulsory Induction of Physicians

Introduction of legislation for mandatory induction of physicians followed five weeks of appeals for volunteers. From the outbreak of fighting in Korea, the services kept up almost constant requests for reserves and others to go on active duty. The totals of medical volunteers for July, the first full month of fighting, are: Army 22, Navy 40 and Air Force six. The margin between medical manpower supplies and demands grew wider each day. During the first part of the month, the services were not authorized to call up reserves of any type on mandatory orders. Later, on presidential order, such authority was granted to the Army, Navy and Air Force. Almost immediately mandatory calls were sent to reserve physicians, but only to those attached to organized units. Even in this period, officials refused to send duty orders to unorganized reserves (Army) and volunteer reserves (Navy), who represent the great bulk of reserve doctors. They reacted partly in deference to hundreds of letters from reserves who urged that first calls be answered by men who had not served time on active duty. By the time bills were drawn up to bring in these men who had not seen active duty, medical requirements were approaching the acute stage. The three services unofficially estimated their shortages at upward of 1,500 men.

This mandatory legislation (H. R. 9294 and H. R. 9311) is directed primarily at former members of A.S.T.P. (Army) and V-12 (Navy) who had all or part of their education paid for by the government but who have not served in active status. However, to avoid the writing of discriminatory legislation, the bills are written to cover persons "in needed professional, technical, scientific and specialist categories." All such persons through the age of 44 would be required to register with Selective Service. The President would be authorized, pursuant to requisitions from Defense Department, to make special calls for persons whose particular skills are needed in the military program.

The first medical priority list is composed of the A.S.T.P. and V-12 graduates already mentioned, and second, men from these groups who have served less than 21 months. Also subject to call are physicians who have had limited periods of military duty in any rank or branch.

One provision of the legislation allows a 60 day deferment period for nonreserve doctors who apply for commissions. Those coming in under this provision would be eligible for $100 per month bonus pay.

A.M.A. Conferences with Military Representatives

A. M. A. representatives spent two days in Washington conferring with ranking government medical officials on all phases of the emergency, civilian and military. The Council on National Emergency Medical Service, with its chairman, Dr. James C. Sargent, presiding, discussed military and civilian needs with representatives of the military and governmental civilian services, including National Security Resources Board, which is responsible for coordinating civilian defense. The Council pledged the "best of medical care to the Armed Forces, while at the same time maintaining a sufficient supply of physicians for civilian medical care." However, it said that immediate needs for military physicians must be met primarily "by men who were permitted to pursue their medical education and those otherwise deferred during World War II." A. M. A. president, Dr. Elmer L. Henderson, stated, "The American Medical Association is determined that the men in the armed services will have adequate medical care even if legislation should prove necessary to insure this."

At one session, the council received progress reports on medical phases of civil defense from representatives of eight eastern seaboard states. Other such regional meetings are scheduled.

Spokesmen from state medical societies gave this picture of civil defense preparations:

1. In all these states full time civil defense directors have been appointed and adequate emergency legislation is in force or has been drafted.

2. A few of the states reported defense planning in preliminary stages.

3. Most have recognized the potential dangers and have created alert and effective civil defense organizations.

In summing up the situation in this area, Dr. Sargent said, "All these states now appear to be accelerating their planning. There are many complications and difficulties, but these are being rapidly overcome."

Military-Civilian Coordination

For the first time, the six top government medical officials are meeting regularly each week in an informal attempt to achieve military-civilian coordination. The system was set up by the simple process of inviting Dr. Leonard Scheele, the Public Health Service Surgeon Genereal, and Dr. Paul B. Magnuson, chief of the Veterans Administration medical department, to sit in on the military medical staff conferences, conducted in the office of Dr. Richard Meiling, head of the Defense Department's Office of Medical Services. Present also are Major General H. G. Armstrong, the Air Surgeon; Major General R. W. Bliss, Army Surgeon General, and Rear Admiral Clifford A. Swanson, Navy Surgeon General.

Medical Support of Combatant Forces

Defense Secretary Louis Johnson has under consideration a recommendation by the Armed Forces Medical Advisory (Cooper) Commitee that the primary mission of military medical services should be to support combatant forces. This is highly controversial. How much military medical service should be channeled to care for miliary dependents, government civilian workers at home and abroad and Veterans Administration cases in military hospitals is open to question. Last fall, in a policy declaration, Secretary Johnson took approximately the same position the Cooper Committee takes. However, Mr. Johnson subsequently explained that military dependents would continue to receive medical care. Such assurance was not given regarding VA cases, and during the spring a number of patients were returned to VA when several military hospitals were shut down. The committee also is understood to have discussed the job freezing of VA medical personnel who are reserve officers and therefore subject to military call. The committee did not take action on this question. A substantial percentage of VA doctors are members of the reserve, and their call to active duty would have an adverse effect on the VA medical program.

Effects of Atomic Weapons

The Atomic Energy Commission-Defense Department publication "The Effects of Atomic Weapons" is released for distribution today. It embraces all phases of blast and radiation. It goes into detail, in scientific terminology, on what to expect in the way of damage and injuries from atomic bomb explosion and is said to include all the helpful information that may be released at this time. Because the book is too technical for general consumption, the National Security Resources Board is reducing and simplifying the material for distribution as a layman's handbook. In recommending preventive action, the book says, "In general, it appears that proper protection against blast, shock and fire control could also minimize the danger to per-

sonnel from thermal radiation and the initial nuclear radiations." It recommends locating disaster-relief and first aid centers on "one of the lower floors of a well constructed, fireproof, reinforced concrete or steel frame building." The 456 page, paper-bound book may be purchased from the Government Printing Office, Washington, D. C., for $1.25.

Navy Reserves

At the time of their separation, Navy officers were not automatically taken off the reserve rolls. They continued as reserves unless at that time or subsequently they specifically resigned their commissions. Under Army procedure, the officer was required to make application for a reserve commission or separation was complete.

Lobbying

After three hours of questioning, the House Lobbying Committee discontinued hearing on the activities of Federal Security Administrator Oscar Ewing and requested its staff to bring in further information. In an attempt to discover whether Mr. Ewing had spent federal funds for his campaign in favor of national compulsory health insurance, the Committee asked for a complete statement of cost to the government of Mr. Ewing's speeches and travel expenses. The Committee also asked for further information on money collected and spent for the 1948 National Health Assembly held in Washington, which Representative Clarence Brown (Republican, Ohio) suggested might have been politically motivated.

Mr. Ewing told the committee he was doing everything he considers proper to push the Truman health plan. "It is my conception that when we keep within the realm of public discussion it is perfectly proper," he said. Committee chairman Frank Buchanan (Democrat, Pennsylvania) supported this idea with a quotation from a General Accounting Office spokesman, who said that an official of Mr. Ewing's rank could engage in such politics but that it would be illegal for any of his employees to enter the same activities.

In line with this, Representatives Brown and Charles Halleck (Republican, Indiana) questioned Mr. Ewing closely about two meetings. He admitted advising several organizations on strategy to win senators over to Reorganization Plan 27 (defeated by the House) at one meeting. The second was a luncheon held in the Federal Security Agency building for representatives of veterans organizations. Mr. Ewing acted as host and admitted using FSA messengers as waiters but told the committee he bought the food served. He urged support of the plan at the meeting but said the discussion centered on the proposed United Medical Administration.

The committee asked about Mr. Ewing's many speeches and recent European survey of national health plans. They learned that he made 33 speeches this year, ". . . but if there's a sentence of politics in them I pay my own way." As for the European trip, "Why, without question it was an official mission."

Concerning the 64 public relations persons in the Federal Security Agency, Mr. Ewing said, "They don't spend much time speech writing." Near the end of the questioning Congressman Clyde Doyle (Democrat, California) asked whether Mr. Ewing approved of socialized medicine. He replied that he did not and said that the present Veterans Administration medical care program was socialized medicine.

Chairman Buchanan has indicated he is anxious to look further into the question of medical lobbies, but so far the committee has not taken formal action.

Money for Hospital Studies

Unless the Senate-House conference committee deletes the item, $750,000 will be available in this fiscal year for studies in hospital administration and technics. Public Health Administration is particularly anxious to learn the most efficient methods of utilizing hospital space and equipment. The money was budgeted for this purpose but was crossed out by a House committee, which also reduced the hospital construction grants authorization from $150,000,000 to $75,000,000. This cut was restored on the House floor, but the $750,000 for administrative research and demonstrations was left out. It was put back in the appropriations bill by the Senate Appropriations Committee. This committee cut funds for venereal disease and tuberculosis control programs by $400,000 each but made the following increases: $600,000 more for cancer research grants, $56,000 for mental health programs, $600,000 for heart research and $100,000 for dental research grants and fellowships.

H. R. 6000

In coming to agreement on the social security extension bill (H. R. 6000), House and Senate conferees dropped out the highly controversial section providing an insurance program for permanently and totally disabled persons. This proposal was opposed by the A. M. A. for three primary reasons: 1. It would create unfortunate relationships between physicians and patients in the determination of disability. 2. It would contribute toward malingering by putting a cash value on disability and illness. 3. It would project the federal government into an area of welfare work which should remain a state responsibility.

The House bill contained such a section, but the Senate committee eliminated it after hearing testimony from A. M. A. and other witnesses. The conferees voted to substitute for this section a system under which disabled persons, whose need had been certified, would be eligible for benefits administered by the states but supplied in part by federal funds. This solution is in line with the official policy of the American Medical Association and carries out recommendations A. M. A. witnesses made at hearings. In another compromise the committee agreed to allow the federal government to make direct payments to physicians and others who supply medical service to patients receiving public assistance. Under present law the money must be turned over to the patient, who then pays for medical service. The committee also voted to permit optometrists as well as physicians to certify blindness under the federal aid-to-the-blind program. However, optometrists are not authorized to determine the cause of blindness.

Notes

Because of difficulties in lining up enough military medical officers, sponsors have revived hope for legislation providing federal aid to medical education. One bill on this subject has passed the Senate but is pigeonholed in the House Interstate and Foreign Commerce Committee, H. R. 5940. However, a somewhat similar bill (H. R. 8886) has been introduced by Representative Andrew Biemiller (Democrat, Wisconsin) and the committee has agreed to take it up. Representative Biemiller still is attempting to get favorable action, and the bill has the active support of President Truman. With the military problem casting long shadows, the Defense Department's attitude toward this legislation has assumed new significance. . . . The House has passed and sent on to the Senate a bill (H. R. 7891) making it illegal for any unauthorized person to "send, ship, carry or deliver" narcotics across state lines. Under present law, transportation of properly stamped narcotics is not a crime, and actual sale and/or delivery must be established. . . . Also passed by the House and sent to the Senate is H. R. 2591, which would standardize medical advisory committees for health programs and authorize the Surgeon General of the USPHS to establish as many new Institutes of Health as he considers necessary; and H. R. 2160, which places a 60 day limit on accrued leave of Public Health Service officers and provides cash settlement of present leave totals in excess of 60 days. . . . A Senate committee is considering a bill (S. 692) to grant a million dollars to the Prisoners' Relief Society to help in establishing a system of farms for rehabilitation of alcoholics. The society would add four million dollars and turn the farms over to the states in which they are located. . . . A House committee has approved a bill (H. R. 8396) authorizing the President to call on any federal department to help states in time of major disaster; this includes dispatch of medical equipment and personnel. It would be effective in peace or war, but the total annual expenditure would be held to $5,000,000. This would in no way lessen the responsibility and authority of the Red Cross.

GOVERNMENT SERVICES

Army

FIRST PURPLE HEART OF THE KOREAN WAR

On July 8, 1950 at the Tokyo General Hospital (formerly called the 49th General Hospital) the first Purple Heart of the Korean War was awarded to Sergeant LeRoy Deans of Alice, Texas, a Signal Corps soldier serving with the Korean Military Advisory Group. Sergeant Deans was injured when a bridge was blown up during action with the enemy. He has recovered from his injury and has returned to duty with his organization.

The Hon. Yong-Joo Kim, head of the Korean Diplomatic Mission to Japan, looks on as Major General Hume pins the Purple Heart on Sergeant Deans.

The award was made by Major General Edgar Erskine Hume, Chief Surgeon of the Far East Command, to whom General MacArthur has delegated the power to give this decoration. General MacArthur has been authorized by the Department of the Army to confer the same decorations for the Korean War as were given during World War II.

Brigadier General Sam F. Seeley

Col. Sam F. Seeley has been promoted to brigadier general according to an announcement by Gen. J. Lawton Collins, Army Chief of Staff.

General Seeley is chief of surgical service at the Army Medical Center's Walter Reed Army Hospital, Washington, D. C. He was the first doctor in the United States to use intra-arterial blood transfusions to prevent shock and circulatory collapse.

Consultants to Far East

Dr. Karl M. Bowman, San Francisco, and Dr. John H. Lyons, Washington, D. C., went to the Far East July 5 as Army Medical Department consultants to spend about 35 days advising and consulting with Army surgeons. Dr. Bowman was certified in psychiatry in 1936. He is professor of psychiatry at the University of California Medical School and serves as medical superintendent of the Langley-Porter Clinic. Dr. Lyons was certified in surgery in 1937. He is professor of clinical surgery at George Washington University.

Certified by Specialty Boards

The following Army medical officers have been certified by American specialty boards: Col. Walter H. Matuska, surgery; Lieut. Col. Victor R. Hirschman, dermatology and syphilology; Lieut. Col. Robert L. Hullinghorst, pathologic anatomy; Major Harry A. Horstmann Jr., internal medicine; Major Frank A. Mantz Jr., pathologic anatomy, and Major James A. Orbison, internal medicine.

Personal

Col. Paul Hayes, previously assigned as surgeon, U. S. Forces in Austria, has arrived in the Office of the Surgeon General to assume his new duties as chief of the Medical Consultants Division.

Col. Bryon L. Steger, assistant chief of the Education and Training Division, Army Surgeon General's Office, recently was awarded the degree of Doctor of Public Health at Johns Hopkins University. Colonel Steger was one of 12 officers selected during the past year for postgraduate study in public health.

Air Force

Selection of Flying Personnel

A joint research program for more accurate psychologic selection of flying personnel has been entered into between the U. S. Air Force School of Aviation Medicine, Randolph AFB, and the University of Texas. The program is for a three year, $75,000 contract subscribed to by each school. The contract calls for a series of special research projects dealing with psychologic and physiologic measurements of anxiety and anxiety reactions. This research will be in conjunction with the Air Force high priority program calling for development of psychiatric screening tests for flying personnel.

The University of Texas will assign a maximum of four graduate students a year to the research projects. They will conduct their work at the School of Aviation Medicine under supervision of members of the research and clinical staff of the school's Department of Clinical Psychology, using Air Force personnel as subjects for their psychologic tests. The first of these graduate students, who will be rated as interns while at the acromedical school, are expected to report by September. They will hold the first internships in clinical psychology in the history of the Air Force. The assignment of these students as interns is in accordance with the program for internship training of graduate students approved by the American Psychological Association. For their part, the work conducted by the interns will constitute advanced training in the fields of personality and clinical psychology and will be credited toward a Ph.D. degree.

Director of the project for the University of Texas is Dr. Karl M. Dallenbach, chairman of that school's Department of Psychology. He will be assisted by Dr. M. E. Bitterman and Dr. Wayne Holtzman, also of Texas, who will participate as senior research staff members. Dr. Sells will be project director for the School of Aviation Medicine.

The contract provides for payment of $74,460.80 to the University of Texas, with the School of Aviation Medicine to become sole owner of new technics, methods, devices, systems, tests and all other products resulting from work accomplished under the contract terms. The Air Force school is also authorized to make periodic inspections to determine progress and acceptability of results.

Public Health Service

Crowding in State Mental Hospitals

The tendency toward overcrowding in state mental hospitals is still on the increase, according to a report released by Dr. Leonard A. Scheele, Surgeon General of the Public Health Service. The report, based on a survey by the National Institute of Mental Health of the Public Health Service, shows that over 600,000 persons—equal to the combined population of Nevada and New Hampshire—were patients in state mental hospitals during 1948.

Data for the survey was provided by 207 state mental hospitals. These institutions indicated that the degree of overcrowding increased by almost 10 per cent during the year covered, rising from 16.7 per cent at the end of 1947 to 18.2 per cent at the end of 1948. There were three states in which the average daily resident patient population was about one and one-half times the rated hospital capacity.

In 1948 state mental hospitals had less than half the number of physicians recommended for adequate medical and psychiatric care of resident patients. The number of full time physicians in state mental hospitals fell 53 per cent short of the number required under standards approved by the American Psychiatric Association. The shortages in personnel are and have been most severe in physicians, clinical psychologists, psychiatric social workers, nursing personnel, attendants and other specialized therapeutic workers.

DISTRIBUTION OF FACILITIES FOR MENTALLY ILL

The survey indicates that, with few exceptions, Southern and Western states have relatively fewer facilities for the mentally ill than Northern and Eastern states. The average daily resident patient population in state mental hospitals in 1948 was 463,496, or more than 3 patients per 1,000 civilian population. However, there is considerable variation among states. For example, New York has a ratio of 5.5 patients per 1,000 population, as compared with 1.7 in New Mexico. Since state hospitals accounted, in general, for about 95 per cent of the resident patient population in all nonfederal public mental hospitals, these differences appear to be fairly good indexes of the state to state variation on the availability of facilities for the care of the mentally ill.

FIRST ADMISSIONS

In every age group, male first admission rates were higher than those of females. Almost one third of the first admissions were of patients 60 years of age or older. There was a 6 per cent increase in first admission rates from 1947 to 1948 and a 2 per cent increase in the rate for patients treated and cared for by state mental hospitals. These increases do not necessarily mean a corresponding increase of hospitalizable mental illness of the population. Increased availability of hospital space and personnel frequently influences admission and resident patient population rates more than true changes in such mental illness.

Patients diagnosed as psychotic accounted for over 80 per cent of all diagnosed first admissions. The diagnosis of dementia precox (schizophrenia) was reported in about 20 per cent, senile psychosis in 13 per cent and manic-depressive psychosis in 6 per cent, these four categories accounting for more than half of all diagnosed first admissions.

Among the first admissions for psychosis, the following diagnoses showed markedly higher rates for males than for females: general paresis, psychosis with other forms of syphilis of the central nervous system, alcoholic psychosis, psychosis due to trauma and psychosis with psychopathic personality. Among females, rates were distinctly higher for the involutional psychoses.

The report, entitled "Patients in State Mental Hospitals: 1948," is Mental Health Statistics Current Report MH-B50, No. 4. Copies may be obtained without charge from the National Institute of Mental Health, Public Health Service, Bethesda 14, Md.

Sugar Research Award

Claude S. Hudson, Ph.D., chief, Laboratory of Chemistry and Chemotherapy of the Experimental Biology and Medicine Institute, has been awarded a $10,000 prize sponsored by the Sugar Research Foundation, Inc. The annual awards of the Sugar Research Foundation are given for discoveries in sugar research and the uses of sugar. The awards are administered through the National Science Fund of the National Academy of Sciences. Possibly Dr. Hudson's most important contribution has been his work on the structure and properties of the carbohydrates and their derivatives. His paper, "The Significance of Certain Numerical Relations in the Sugar Group," established the rule of isorotation, known as the Hudson rule. This has become a valuable tool for chemists in ascertaining the configuration of carbohydrates. Other honors awarded Dr. Hudson are: Willard Gibbs Medal, Hillebrand Prize, Richards Medal, Bordon Medal and Award, and Cresson Medal of the Franklin Institute, University of Pennsylvania.

Tuberculosis Sanatorium

The Public Health Service, on July 1, transferred its tuberculosis sanatorium for the East Coast area from Neponsit, Long Island, N. Y., to Manhattan Beach, Brooklyn. The new hospital is one recently vacated by the Veterans Administration. It has been designated the U. S. Marine Hospital, Manhattan Beach. Dr. Myron D. Miller is medical officer in charge. The tuberculosis hospital is one of two sanatoriums maintained by the Public Health Service for merchant seamen, coast guardsmen and other legal beneficiaries. The other tuberculosis hospital is located at Fort Stanton, N. Mex.

Clinical Pathology Laboratory in Atlanta

A model clinical pathology laboratory is being established in Atlanta, Ga., as a cooperative project by the Communicable Disease Center of the Public Health Service, Grady Memorial Hospital, Atlanta, and Emory University School of Medicine. Dr. F. William Sunderman will head the laboratory. The program of the new laboratory has two aspects: (1) to develop, through research, more reliable methods for clinical laboratories and (2) to educate and train laboratory personnel.

Veterans Administration

Guest Speaker at Veterans Hospital, Northport

Dr. Harry C. Solomon, professor of psychiatry at Harvard University and medical director of the Boston Psychopathic Hospital, was guest speaker at the Veterans Hospital in Northport, Long Island, N. Y., on July 18, 1950. Dr. Solomon discussed significant aspects of the care and treatment of acutely and chronically psychotic patients. He stressed the recent advances in physiologic and chemical studies of mental illness and their influence on treatment. The experience with prefrontal lobotomy at the Boston Psychopathic Hospital in the treatment of the more chronically psychotic patients was presented and discussed. Physicians from the surrounding New York State hospitals, including Kings Park, Central Islip, Pilgrim and Creedmoor, attended the meeting.

Personal

Dr. J. Ralston Wells has been appointed manager of the VA hospital now under construction at Grand Island, Neb. Dr. Wells has been manager of the VA hospital at Dallas, Texas, since December 1947. He received his medical degree from the University of Pennsylvania in 1912 and formerly practiced surgery in Philadelphia.

The Veterans Administration has announced the appointment of Dr. Frederic R. Eastland, chief of professional services at the VA hospital, Lake City, Fla., as manager of the VA hospital, Dallas, Texas, succeeding Dr. J. Ralston Wells, who has been made manager of a new VA hospital under construction at Grand Island, Neb.

MEDICAL NEWS

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

CALIFORNIA

Society News.—At the annual meeting of the California Society of Allergy in San Diego on May 1 Dr. Frank G. Crandall Jr., Los Angeles, was installed as president. Dr. Samuel H. Hurwitz, San Francisco, was chosen president-elect and Dr. M. Coleman Harris, Los Angeles, secretary-treasurer.

University Receives Fischer Library.—The University of California at Berkeley has received from Hermann O. L. Fischer, Ph.D., of the department of biochemistry the complete working library of his father, Emil Fischer, an early researcher in biochemistry. The collection, which will be the nucleus of a library in the virus laboratory and biochemistry building soon to be constructed at Berkeley, contains a particularly comprehensive group of periodicals covering the fields of chemistry and biochemistry. Many of the sets are complete from the first mid-nineteenth century issue to the present.

Personals.—Dr. Edward P. Luongo, medical director of the General Petroleum Corporation, Los Angeles, has been elected to the presidency of the Western Association of Industrial Physicians and Surgeons.——The James D. Bruce Memorial Award of the American College of Physicians was recently presented to Dr. Karl F. Meyer of the University of California, San Francisco. Dr. Meyer is a graduate and Doctor of Medicine Honoris Causae of the University of Zurich, professor of research medicine at the University of California and director of the Hooper Foundation for Research Medicine.——The University of Rochester (N. Y.) at its centennial convocation in June awarded Dr. Charles M. Carpenter, professor and chairman of the department of infectious diseases at the University of Southern California School of Medicine, Los Angeles, a special citation for devotion to his alma mater and for distinguished service in the field of infectious diseases.

COLORADO

Personal.—Dr. Philip A. Lief, associate professor of anesthesiology and head of this service at Colorado University Medical Center, Denver, has been appointed attending anesthesiologist on a full-time basis and will become head of this service in Montefiore Hospital for Chronic Diseases, New York City, on September 1.

Penrose Hospital Cancer Seminar.—A cancer seminar sponsored by the Penrose Cancer Hospital will be held at the Broadmoor Hotel in Colorado Springs September 9. Photographic copies of roentgenograms and clinical summaries of 14 problem cases of bone lesions have been sent to participating radiologists. Histopathologic slides of the same 14 cases and their clinical summaries have been sent to participating pathologists. Drs. Philip J. Hodes of the University of Pennsylvania School of Medicine, Philadelphia, and Lauren V. Ackerman of Washington University School of Medicine, St. Louis, will be the guest speakers. Cases will be discussed in succession with audience participation. The proceedings of the cancer seminar will be recorded and later edited and published. In the evening of September 9 there will be a banquet, at which Dr. Charles S. Cameron Jr., New York, medical and scientific director of the American Cancer Society, will be the speaker. Those desiring to attend may write to J. A. del Regato, M.D., director, Penrose Cancer Hospital, Colorado Springs.

FLORIDA

Students Are County Association Guests.—Medical students home for vacations have been special guests of the Dade County Medical Association at its summer meetings. The association believes that students may thus familiarize themselves with local medical facilities and needs, and scientific reports given at meetings should be of real value to them.

Dr. Sweany Heads State Tuberculosis Hospitals.—Dr. Henry C. Sweany, medical director of research and director of laboratories at the Municipal Tuberculosis Sanatorium, Chicago, will become chief medical director for all Florida state tuberculosis hospitals on October 1. He will head medical services at all the sanatoriums, Orlando, Lantana and Tampa, and the temporary hospital at Marianna, which will be replaced by the 350 bed sanitorium being built at Tallahassee. He is an associate professor of medicine at Northwestern University.

ILLINOIS

Hospital News.—Wayne County's new 84 bed hospital was dedicated June 25, Illinois' fourth grant-in-aid hospital to be completed. Construction costs were $1,236,174, of which the federal government and the State of Illinois paid two thirds under the hospital construction act. The remainder was raised locally by voluntary contributions. Speakers included Gov. Adlai E. Stevenson; George H. Van Dusen, D.D.S., representing the Illinois Hospital Association; Dr. Roland R. Cross, director of the State Department of Public Health; Mr. L. A. Blackburn, president of the hospital's board of directors, and Mr. Alfred Van Horn, the hospital's administrator.

Here Is Your Doctor.—A transcribed radio series, titled "Here Is Your Doctor," opened on Station WCFL August 6 at 11:45 a. m. Dr. William P. Swisher, Evanston, clinical associate in medicine, University of Illinois College of Medicine, gave the initial broadcast on "What Is a Case History?" The series, which is presented under the auspices of the Educational Committee of the Illinois State Medical Society, was preceded with a live interview August 4 by Vic Barnes, WCFL news commentator, and two members of the Educational Committee, Dr. Ford K. Hick and Dr. Karl L. Vehe, both of Chicago. Also interviewed was Dr. James P. Shortall Jr., medical director of the Chicago Federation of Labor, who will appear each week as moderator, together with Mr. Frank McGivern, studio announcer. Forthcoming broadcasts will be:

August 13, Philip Lewin, Poliomyelitis.
August 20, Joseph N. Rappaport, Evanston, Importance of Preschool Examinations.
August 27, George A. Hellmuth, Understanding the Heart.
Sept. 3, George M. Cummins Jr., Medical Aspects of Stomach Ulcers.
Sept. 10, Richard J. Bennett Jr., Hernias.
Sept. 17, Peter A. Rosi, Surgical Aspects of Stomach Ulcers.

"Here Is Your Doctor" is being presented at the request of station WCFL.

Chicago

Society News.—Newly elected officers of the Chicago Ophthalmological Society include Drs. J. Robert Fitzgerald, president; Irving Puntenney, vice president, and Gail R. Soper, Evanston, Ill., secretary-treasurer.

Laboratory Named for Dr. Volini.—The antibiotic laboratories of Hektoen Institute for Medical Research of Cook County Hospital has been named for the late Dr. Italo F. Volini, Chicago heart specialist who died June 24. Dr. Volini was one of the institute's founders, a member of its board of trustees and a pioneer in antibiotic therapy. At the time of his death in San Francisco, he headed the medical department of Loyola university Stritch School of Medicine, of which he also had been a former dean.

Postgraduate Course in Endocrinology.—Michael Reese Hospital Postgraduate School is offering a course in Diseases of the Endocrine, Physiology and Diagnostic Methods. The class will meet September 18-29 and will be under the direction of Dr. Rachmiel Levine, director of the department of metabolic and endocrine research. The course will consist of a balanced program of lectures and case demonstrations. Tuition is $100. For further information and a detailed schedule address Dr. Samuel Soskin, Dean, Michael Reese Hospital Postgraduate School, 29th Street and Ellis Avenue, Chicago 16.

International College of Surgeons Expands Headquarters.—Full title to the former Whiting mansion, 1524 Lake Shore Drive, was acquired in July by the International College of Surgeons. Modeled after the Petit Trianon in Versailles, Marie Antoinette's favorite residence, the four story structure offers 18,600 square feet of area and will extend the facilities of the college more than 100 per cent, as the newly acquired building is larger than the college's present address next door, at 1516 Lake Shore Drive. Future renovation plans call for connecting passageways between the two buildings and include an amphitheatre, an assembly hall and a surgical museum.

IOWA

Hospital to Add 125 Beds.—St. Luke's Methodist Hospital, Cedar Rapids, on May 1 began a $2,500,000 building program which will increase its bed capacity from 200 to 325. The addition is being constructed without the help of federal funds.

Personal.—Dr. Herbert E. Stroy of Osceola was elected in July president of the state board of health. He is the oldest member of board in point of service, having served under six governors. His present term will expire in 1953.

KANSAS

Medical Student Loan Fund.—The Kansas Medical Society recently made a gift of $10,000 to the University of Kansas Endowment Association to set up the Medical Student Loan Fund of the Kansas Medical Society. The gift is made, according to a letter from executive secretary, Mr. Oliver E. Ebel, with the expressed purpose of assisting students during their third and fourth years in the school of medicine at the university who are in need of financial aid. The maximum loan at any one time per student is not to exceed $500 and will be made under the authorization of the dean of the school of medicine. The interest rate on loans is to be 2 per cent. Loans will fall due not later than four years after graduation, but they may be renewed on an annual basis if proof of the necessity of this is forthcoming. Names of students to whom money has been loaned and the amounts of those loans made during the previous year are to be announced annually by the dean of the school of medicine to the president of the Kansas Medical Society. The dean of the school of medicine and the president and president-elect of the medical society will serve as an advisory and grievance committee on matters which may arise in connection with the student loans.

KENTUCKY

Cancer Symposium.—The annual cancer symposium of the Kentucky Division of the American Cancer Society will be held at Memorial Hall of the University of Kentucky, Lexington, August 16. The Kentucky State Medical Association, the state department of health and the university are cooperating in presenting the program. Out of state speakers include:

George T. Pack, New York, Cancer of the Stomach.
Jacques P. Guequierre, Bryn Mawr, Pa., Surgical Diathermy and Treatment of Cancer.
Emil Novak, Baltimore, Cancer of the Uterus.
Ben G. Fishkin, Los Angeles, Pathological Aspects of Lymphoblastomas.
Osler A. Abbott, Atlanta, Ga., Bronchogenic Carcinoma.
John J. Modlin, Columbia, Mo., Cancer of the Head and Neck.

Psychiatric Training for Nurses.—A school for psychiatric training will be opened September 1 at Central State Hospital in Lakeland. The nurses to be in charge of instruction are Miss Mary Topalis and Miss Ruth Matheny, both of New York, who arrived July 17 to join the hospital staff in organizing the program. Both nurses have master's degrees in nursing education from Columbia University and experience in New York and Washington hospitals. Since Kentucky hospitals require graduate nurses to have three months of psychiatric training and since the state institutions, heretofore, could not furnish this training, the school will fulfil this need, and more students will be retained for service in Kentucky.

MICHIGAN

University Promotions.—Promotions at the University of Michigan Medical School, Ann Arbor, have been made as follows: Promoted to the rank of professor are Drs. Jerome W. Conn and John McFarland Sheldon, in internal medicine, and Cameron Haight, Edgar A. Kahn and Henry K. Ransom, in surgery. Promoted to assistant professors are Drs. Robert E. L. Berry, Marion S. DeWeese, Sylvester J. O'Connor and Herbert E. Sloan Jr., in surgery; Winthrop N. Davey in internal medicine; Edward W. Lauer, Ph.D., in anatomy; Drs. William J. Morro and J. Joseph Quilligan Jr., in pediatrics and communicable diseases; Ward M. O'Donnell, in pathology, and Dr. Martha R. Westenberg, in neurology. In the school of public health those promoted to assistant professors include Martin Hanig, Ph.D., and Dr. J. Joseph Quilligan Jr., in epidemiology.

NEBRASKA

Drs. McCarthy and Neu Head Departments.—Dr. Harry H. McCarthy, an instructor in surgery since 1946, has been elected head of the department of surgery of Creighton University School of Medicine, Omaha, from which he graduated in 1937. He did postgraduate work at the St. Louis University Hospital group at the Washington University School of Medicine in St. Louis. He was a fellow in surgery at the Mayo Clinic, Rochester, Minn., from 1944 to 1946. Dr. McCarthy succeeds Dr. Charles McMartin, who will remain on the faculty. Dr. Harold N. Neu, an instructor in medicine since 1946, has been named head of the department of medicine at the university, succeeding Dr. Adolph Sachs. Dr. Neu has been director of the arthritis clinic, is a staff member of St. Joseph's and St. Catherine's hospitals and is a consultant in internal medicine for the Offutt Air Base Hospital. He served in the army from 1941 to 1946.

NEW HAMPSHIRE

Hospital Honors Senior Members.—The medical staff of Frisbie Memorial Hospital, Rochester, recently sponsored a testimonial banquet at the Rochester Country Club, attended by over 200 physicians, hospital personnel, trustees and leading citizens, to honor five senior members. The five, all active for many years in local professional and hospital progress, are Drs. Jeremiah J. Morin, Forrest L. Keay and Walter J. Roberts, all of Rochester; Harry O. Chesley, Dover; Joseph L. McLaughlin, Farmington, and Thomas J. Morrison, Somersworth. Drs. Ezra A. Jones, Manchester, past president of the state medical society, and Dr. Deering G. Smith, Nashua, secretary of the state society, were among those who spoke at the dinner.

NEW JERSEY

Hospital Dedicated at Camden.—The new Our Lady of Lourdes Hospital was opened at dedication ceremonies in Camden in June and received its first patients during July. Archbishop Thomas I. Walsh of Newark officiated at the dedication ceremonies for the $4,500,000, 362 bed structure.

NEW YORK

Interprofessional Council.—The Interprofessional Council of Monroe County was officially formed June 1. It was instigated by the Monroe County Medical Society in an effort to bring together representatives of professional groups for a united effort on problems of mutual interest. Representatives of the Monroe County Medical Society serving on the council are Dr. Charles S. Lakeman and Morris J. Shapiro, both of Rochester.

Progress of State Mental Hygiene Program.—The New York State Department of Mental Hygiene has made progress during the past year in its building program to relieve overcrowding in the state's mental institutions, according to Dr. Newton Bigelow, commissioner of mental hygiene. During the fiscal year ended March 31 contracts were awarded and in the majority of cases construction started on 14 buildings at 10 institutions to provide more than 5,000 beds at a cost of nearly $40,000,000. The Mental Health Commission, created by the 1949 legislature, has formulated a preliminary plan to develop an integrated program for mental health on the community level. Further achievement was the establishment of two new child guidance clinic teams, making a total of 11 traveling teams which now operate clinics in 155 state communities. A 75 hour course for ward attendants and the food service personnel was completed. Activities in the field of public education for mental health also have been expanded.

New York City

Gift to Medical Center.—The International Ladies' Garment Workers' Union has made a gift of $10,000 to the New York University-Bellevue Medical Center. Of this amount, $2,500 was earmarked for the center's Institute of Physical Medicine and Rehabilitation now under construction and the remaining $7,500 for aid in constructing the new building for the center's two medical schools, New York University College of Medicine and New York University Post-Graduate Medical School.

Clinic for Retarded Children.—New York Medical College, Flower and Fifth Avenue Hospitals, opened a clinic for retarded children June 28 under the direction of Dr. Lawrence B. Slobody, director of pediatrics at the hospital. Children are given intelligence tests, followed by physical measurements, family histories, roentgenograms and blood and glandular tests. The clinic has filled its appointment books to see 2,500 children by the end of the year. Ten new patients are examined each day, and 15 return at the same time for treatment. Aid in financing the clinic has been given through the Association for the Help of Retarded Children.

Hospitals, Doctors Organize for Defense Aid.—Emergency Medical Service of New York City's civil defense plan is being organized through Dr. Marcus D. Kogel, commissioner of hospitals, designated head of the service. Organizations of physicians and hospitals have offered their services. Dr. George Baehr, president and medical director of the Health Insurance Plan of Greater New York, has offered the services of 900 physicians in 30 medical groups. The hospital resources are being mobilized by a special committee of the Greater New York Hospital Association. Physicians have been organized into

groups of 25 or more representing all fields of clinical medicine and are located strategically throughout the five boroughs. Medical centers of the insurance plan, according to Dr. Baehr, could be equipped as casualty stations and their staffs organized as mobile teams. Each station of the plan already has a day and night telephone service and can be equipped with short wave radio in anticipation of interrupted telephone service.

NORTH DAKOTA

Society News.—At the annual meeting of the North Dakota Pediatrics Society the following officers were chosen for the year 1950-1951: Drs. Laurence G. Pray, Fargo, president; Bernard A. Mazur, Fargo, vice president; William J. Ball, Minot, secretary-treasurer. The next meeting will be at the Northwest Clinic, Minot, on October 28.

Personal.—Dr. Michael F. Koszalka of New York was appointed chief of medical service of the Veterans Administration Hospital at Fargo, N. D., on May 22. Dr. Koszalka formerly held offices for the practice of internal medicine at Minneapolis, Minn., and was chief of the gastroenterology section at the Veterans Administration Center, Wood, Wis. He is a graduate of Georgetown University School of Medicine, Washington, D. C. (1938).

PENNSYLVANIA

Personal.—Four hundred friends and neighbors honored Dr. John D. Greaves, New Alexandria, July 11 at a testimonial dinner. Dr. Greaves has just completed 50 years of practice in the community. Many tributes were paid the veteran physician.

State Medical Society Committee on Procurement of Physicians.—The first action aimed at supplying Pennsylvania's share of doctors for military service was taken in Harrisburg July 28, when the Board of Trustees of the Medical Society of the State of Pennsylvania appointed a committee of four physicians to prepare tentative plans with the objective of assigning medical officers when the army and navy calls come. Drs. E. Roger Samuel, Mount Carmel, president; Harold B. Gardner, Pittsburgh, president-elect; James Z. Appel, Lancaster, and James L. Whitehill, Rochester, trustees, were named to the committee. Plans call for the establishment of procurement committees in each of the sixty county medical societies throughout the commonwealth.

Pittsburgh

Symposium on Orthopedic Appliances.—The third Annual Symposium on Orthopedic Appliances will be held at the Mellon Institute during the week of September 18. It will again be a cooperative undertaking of the department of orthopedic surgery of the University of Pittsburgh School of Medicine and the Sarah Mellon Scaife Foundation's Multiple Fellowship on Orthopedic Appliances at the institute. The 1950 sessions will be devoted largely to clinical, laboratory and shop demonstrations and discussions. Included will be several formal lectures by nationally recognized authorities on orthopedics, who will discuss: bracing in the treatment of back conditions; cerebral palsies; congenital deformities, and the general field of rehabilitation and training of the handicapped. The symposium will be open by invitation to orthopedic physicians and surgeons, orthopedic technologists and other rehabilitation workers. Hotel reservations will be placed by the fellowship for all persons who are accepted for attendance. The fee of $10 is payable at the time of registration. Out of state lecturers include: Signe Brunnstrom, West Orange, N. J.; Winifred Belfrage, Denver; Drs. Joseph H. Kite, Atlanta, Ga., Winthrop M. Phelps, Cockeysville, Md.; James E. M. Thomson, Lincoln, Neb., and Paul C. Williams, Dallas, Texas.

TENNESSEE

Faculty Appointments.—The University of Tennessee College of Medicine has announced the appointment of three assistant professors. Dr. Robert C. Little, Cleveland, has joined the department of physiology. He received his medical degree from Western Reserve University School of Medicine, Cleveland, in 1944. Fern W. Smith, Ph.D., former assistant professor of anatomy at the University of Missouri, Columbia, has been appointed to the Division of Anatomy. She received her graduate training at Brown University, Providence, R. I., and at the University of Minnesota in Minneapolis. Her research interests are in the field of cancer biology. Dr. Carl E. Hookings, formerly associated with the Department of Health of the Province of Ontario, Canada, has been added to the faculty of the Division of Preventive Medicine, with the rank of assistant professor. He will also direct the Maternal and Child Hygiene Division of the Memphis and Shelby County Health Department. Dr. Hookings formerly was a lecturer at the University of Toronto School of Medicine. He is a graduate of the University of Toronto Faculty of Medicine (1929).

WEST VIRGINIA

Citizens' Health Planning Committee.—Gov. Okey L. Patteson has named a health-planning committee composed of twenty-two business and professional men and women of the state. The official name of the new group is "West Virginia Citizens' Health Planning Committee." W. J. Scarborough, Ph.D., of Buckhannon, president of West Virginia Wesleyan College, heads the committee. Physicians serving are Drs. Deane F. Brooke of Beckley, United Mine Workers area medical administrator, and Raymond M. Sloan of Barboursville.

The committee was appointed as an outgrowth of a meeting held in Charleston in December 1949. A follow-up conference was held in February and was attended by representatives of the U. S. Public Health Service, American Public Health Association, National Health Council, United Mine Workers Health and Welfare Fund and the West Virginia State Medical Association. The broad functions of the new committee have been outlined as follows: Coordinate as far as possible the thinking and planning of all organizations concerned with the public health; work to prevent overlapping and duplication; study health needs of communities through appraisals, inventories and other fact-finding activities; develop community health programs; stimulate public interest in health problems and their solution; promote health legislation, and render to members common services in the field of statistics, research and community health education. It is thought by many that this committee will develop into a state health council, the need for which has been discussed in conferences between public health workers, representatives of the state medical association and various other groups interested in public health needs.

GENERAL

New England Practitioners Organize.—The New England Association of General Practitioners was organized at a meeting in Boston in May. Dr. John R. Fowler, Barre, Mass., was elected president and Dr. Peter J. Scafarello, Hartford, Conn., secretary.

Mr. Wallerich Dies.—Mr. George W. Wallerich, president of V. Meuller & Company, Chicago, died July 3. He had been a leader in the surgical instrument industry for more than 45 years and was co-founder of *A.S.T.A.*, American Surgical Trade Association journal.

National Medical Association Meeting.—This association will hold its annual convention August 28 to September 1 at the Phenix High School Building on Hampton Institute Campus, Hampton, Va., under the presidency of Dr. C. Herbert Marshall, Washington, D. C. The program has been arranged in section meetings.

Scholarships in Cerebral Palsy.—The Elks National Foundation has granted one fellowship and several scholarships in the field of cerebral palsy. Applications for scholarships for technicians, who are to be trained in speech therapy and in the other phases of physical therapy having to do with cerebral palsy, and applications for fellowships may be addressed to the Hon. John F. Malley, who is chairman of the Elks National Foundation, 16 Court Street, Boston.

Periodicals for Foreign Relief.—The American Council of Voluntary Agencies for Foreign Service, Inc., which is interested in providing relief to war-stricken peoples abroad, will furnish clearing house services to persons or organizations who wish to dispose of their bound copies of medical journals. Through it, 54 American voluntary agencies coordinate their plans and activities not only among themselves but also with nonmember agencies and with governmental and intergovernmental agencies here and abroad. The council's address is Willkie Memorial Building, 20 West 40th Street, New York 18.

Society Appoints Social Work Consultant.—The National Society for Crippled Children and Adults has appointed Mrs. Hale C. Pragoff as medical social work consultant. She will interpret specific needs of the handicapped to other national organizations, advise state and local member units of the National Society in the development of medical social services and explore the areas of cooperation between the society and other agencies in the health and welfare fields. Recently Mrs. Pragoff was associated with the Arizona State Department of Health, where she was medical social consultant employed by the Maternal and Child Health Division.

International Medical Women's Meeting.—The Medical Women's International Association will hold its sixth congress in Philadelphia September 10-16 at the invitation of the Woman's Medical College of Pennsylvania, which is celebrating its centennial. Ninety-five women medical delegates from fifteen foreign countries are expected to attend. Dr. A. Charlotte

Ruys of Amsterdam is the president of this association, and Dr. Ada C. Reid of New York City is president-elect. Wednesday will be "American Day." The morning program will include scientific papers, clinics and demonstrations. The opening exercises of the second century of the Woman's Medical College will be the program of the afternoon.

Midyear Traffic Deaths Up 11 Per Cent Over 1949.—The greatest traffic accident death toll since the end of World War II is in prospect for 1950 if the present rate of increase continues, the National Safety Council reports. At the halfway mark, traffic deaths are running 11 per cent more in 1950 than for the same period of 1949, and the council said this will mean a toll of 35,000 or more lives for 1950. Deaths totaled 15,080 at the end of six months. For June the toll was 2,610, a 10 per cent increase over the corresponding month last year. The principal reason for the increase is more travel without a compensating improvement in driving habits and traffic control, the council said. Mileage, estimated from gasoline consumption for five months, was up 11 per cent, exactly the same as the death increase. Only nine states were able to report decreases for June; four reported no change and 33 showed increases.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the periods indicated have been received from the National Office of Vital Statistics, U. S. Public Health Service. During the week ended July 29 the National Foundation for Infantile Paralysis shipped 18 respirators, 14 hot pack machines and 147 miscellaneous pieces of hospital supplies and equipment. Thirteen respirators went to Roanoke, Va., primarily for patients of Wythe County.

	Week Ended		Total*		Five-Year Median,
	July 29, 1950	July 30, 1949	1950	1949	1945-1949
United States Total	964	1,935	4,947	7,289	3,474
New England States:					
Maine	5	15	12	63	4
New Hampshire	1	1	3	9	9
Vermont	..	1	4	4	4
Massachusetts	7	33	28	133	13
Rhode Island	3	..	6	7	1
Connecticut	14	14	36	46	21
Middle Atlantic States:					
New York	90	200	317	452	154
New Jersey	20	27	109	97	96
Pennsylvania	20	17	88	55	47
East North Central States:					
Ohio	26	65	109	150	96
Indiana	5	83	34	264	32
Illinois	52	145	183	333	106
Michigan	44	146	133	302	39
Wisconsin	13	47	62	105	29
West North Central States:					
Minnesota	8	91	44	317	83
Iowa	62	83	191	195	64
Missouri	12	194	64	354	46
North Dakota	1	18	2	77	16
South Dakota	2	32	14	64	24
Nebraska	14	23	82	84	70
Kansas	14	68	61	179	49
South Atlantic States:					
Delaware	4	1	6	9	5
Maryland	9	7	19	18	15
District of Columbia	9	1	35	12	12
Virginia	82	13	231	45	45
West Virginia	13	24	59	85	14
North Carolina	30	15	104	71	35
South Carolina	34	8	167	27	27
Georgia	8	8	51	57	48
Florida	8	7	85	70	70
East South Central States:					
Kentucky	34	47	140	142	37
Tennessee	13	48	98	163	71
Alabama	18	16	90	100	76
Mississippi	13	12	115	121	45
West South Central States:					
Arkansas	23	71	101	476	49
Louisiana	10	6	97	84	41
Oklahoma	25	96	173	514	97
Texas	107	96	1,149	1,112	476
Mountain States:					
Montana	2	1	7	10	10
Idaho	3	30	20	113	14
Wyoming	1	2	16	16	13
Colorado	Report not received				
New Mexico	2	5	25	48	21
Arizona	2	8	35	27	27
Utah	..	5	9	44	17
Nevada	..	..	1	8	..
Pacific States:					
Washington	20	16	48	74	43
Oregon	8	3	44	47	16
California	67	87	431	500	200

* Beginning with the 12th week of each year.

American Congress of Physical Medicine.—This congress will hold its annual scientific session and instruction seminar August 28 through September 1 at the Hotel Statler, Boston. The program is made up largely of a series of symposiums, some meeting concurrently. The subjects include physiology, cerebral palsy, electromyography, hydrotherapy, occupational therapy, braces, ultrasonics and rehabilitation. Those speaking by invitation include:

David McL. Greeley, Princeton, N. J., Organization of a Cleric for the Treatment and Study of Children with Cerebral Palsy.
Frederic T. Jung, Council on Physical Medicine and Rehabilitation, American Medical Association, Chicago, Measurement of Fitness as a Problem of Physical Medicine.
Stanley J. Sarnoff, Boston, Electrophrenic Respiration.
Johnson F. Hammond, associate editor, THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Chicago, Scientific Medical Writing.
Arthur T. Richardson, D. Phys M., Westminster, London, England, Analysis of Muscle Action Potentials in the Differential Diagnosis of Neuromuscular Diseases.
Thomas L. Delorme, Boston, Some Physiologic Aspects of Progressive Resistance Exercise.
Winfred Overholser and Virginia D. Coffin, B.S., Washington, D. C., How Occupational Therapy Helps in a Psychiatric Hospital.
Stafford L. Osborne, Ph.D., Chicago, Heating of the Maxillary Sinus by Microwaves.
Harold V. Cranfield, Toronto, Canada, Physical Management of Dupuytren's Contracture.
James A. Coss Jr. and Charles A. Regan, New York, Combined Use of Cortisone and Rehabilitation Technics in Certain Arthritis Problems.
Charles L. Newberry, Washington, D. C., Rehabilitation Frontiers in Physical Medicine.
Henry H. Kessler, West Orange, N. J., Rehabilitation of the Severely Disabled.
Henry T. Randall, New York, Homeostasis of the Surgical Patient and Its Value for Convalescence and Rehabilitation.
Louis Daily Jr., E. Albert Zeller, Khalil G. Wakim, William L. Benedict and Julia F. Herrick, Ph.D., Rochester, Minn., Influence of Microwaves on the Enzyme Systems of the Eye.
Emery K. Stoner, Philadelphia, Effect of Microwave Radiation on the Peripheral Pulse Volume, Digital Skin Temperature and Digital Blood Flow in Man.
Robert C. Darling and Ethel Shea, B.S., New York, Effect of a Short Period of Strenuous Exercise on Hemoconcentration.
Frank R. Ober, Boston, Physical Exercises in Low Back Conditions.
G. Keith Stilwell and Allan Hemingway, Ph.D., Minneapolis, Problems in the Measurement of Thermal Radiation.

The speaker at the congress dinner Wednesday at 7 p. m. will be Dr. Nathaniel W. Faxon, Boston, director emeritus, Massachusetts General Hospital. Scientific and technical exhibits will be displayed.

FOREIGN

French Congress of Otorhinolaryngology.—The forty-eighth French Congress of Otorhinolaryngology will be held at the headquarters of the Faculty of Medicine of Paris October 16-19, under the chairmanship of Prof. J. Rebattu of Lyon. The subjects to be treated are (1) diagnosis and therapeutic treatment of chronic tumefaction of the parotid gland and (2) surgical treatment of facial and otologic paralysis. Speakers include Drs. L. Leroux, R. Gaillard, J. Lemoyne, A. Bloch, R. Bourgeois, P. Aboulker and J. Lefevre. Operative sessions will be held in the mornings at various hospital services. The Confederation of French Medical Syndicates, 60, Boulevard de la Tour-Moubourg, Paris, will take care of transportation and housing in Paris. For information address Dr. H. Flurin, General Secretaire, 19 Avenue Mac Mahon, Paris 17e.

Austrian Congress of Physicians.—The Austrian Van Swieten Society for the promotion of medical research and refresher courses for physicians will arrange this year an All-Austrian Congress of Physicians to take place at 32 Schwarzstrasse, Mozarteum-Salzburg, September 7-9. The principal subject of the congress will be "the vegetative nervous system and its relations to pathogenesis." Lectures include:

Prof. Mark, Rostock, Germany, The Vegetative System—Internal Secretion and Assimilation.
Prof. Hoff, Vienna, Pathology of the Hypothalamus.
Prof. Sunder-Plassmann, Muenster, The Vegetative Nervous System as the Focus of Operative Interventions.
Richard J. Bing, Baltimore, Md., Latest Achievements of the Physiology of the Human Heart.
Prof. Erlacher, Vienna, Ischialgia and Its Relations to Knee-Cap Affections.
Prof. Antoine, Vienna, Cyclic Disturbances and Their Treatment.

The office of the secretary of the Van Swieten Society invites all American colleagues who are on a European trip.

DEATHS IN FOREIGN COUNTRIES

Dr. H. Burton Logie, St. Mary Bourne, England, former assistant professor of medicine at the University of Alberta, Canada, executive secretary of the National Conference of Nomenclature of Diseases in 1930-1937 and editor of the third edition (1935) of "A Standard Classified Nomenclature of Disease," died June 5 at his home, aged 67.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Oral.* Chicago, Oct. 8-11. Sec., Dr. Curtiss B. Hickcox, 745 Fifth Ave., New York 22.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOGY: *Written.* Various locations, Sept. 14. *Oral.* Detroit, Oct. 20-22. Sec., Dr. George M. Lewis, 66 East 66th St., New York 21.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written.* Oct. 16. Asst. Sec., Dr. William A. Werrell, 1 West Main Street, Madison 3, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: Chicago, Oct. 1950. Applications no longer accepted. Sec., Dr. W. J. German, 789 Howard Ave., New Haven, Conn.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY. *Part I, Written Examination and Review of Case Histories.* Various locations, Feb. 2, 1951. Final date for filing applications is Nov. 5. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh 6.

AMERICAN BOARD OF OPHTHALMOLOGY: *Written.* Various Centers, Jan. 5-6, 1951. San Francisco, March 11-15; New York, May 31-June 4. Sec., Dr. Edwin B. Dunphy, 56 Ivie Road, Cape Cottage, Maine.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: *Part II.* Chicago, Jan. 25-26. Final date for filing applications is Aug. 15, 1950. Sec., Dr. Harold A. Sofield, 122 South Michigan Avenue, Chicago 3.

AMERICAN BOARD OF OTOLARYNGOLOGY: Chicago, Oct. 3-6. Sec., Dr. Dean M. Lierle, University Hospital, Iowa City.

AMERICAN BOARD OF PATHOLOGY: St. Louis, Oct. 13-14. Sec., Dr. Robert R. Moore, 507 Euclid Ave., St. Louis 10.

AMERICAN BOARD OF PEDIATRICS: *Oral.* Chicago, Oct. 13-15 and Boston, Dec. 1-3. Exec. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

AMERICAN BOARD OF PHYSICAL MEDICINE AND REHABILITATION: *Oral and Written.* Boston, Aug. 26-27. Final date for filing applications is April 1. Sec., Dr. Robert L. Bennett, 30 N. Michigan Ave., Chicago.

AMERICAN BOARD OF PREVENTIVE MEDICINE AND PUBLIC HEALTH: St. Louis, Oct. 28-29. Sec., Dr. Ernest L. Stebbins, 615 N. Wolfe St., Baltimore.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: Next examination, Dec. 18-19. Final date for filing applications is Sept. 1.

AMERICAN BOARD OF SURGERY: *Written.* Various Centers, Oct. 25. *Written.* Various centers, March 1951. Final date for filing applications is Dec. 1, 1950. Sec., Dr. J. Stewart Rodman, 225 South 15th Street, Philadelphia.

AMERICAN BOARD OF UROLOGY: Chicago, Feb. 10-14, 1951. Final date for filing applications is Sept. 1, 1950. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 21.

BOARDS OF MEDICAL EXAMINERS

ALASKA:* Juneau, Sept. 5. Special examinations given on application. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

GEORGIA: Atlanta, Oct. 10-11. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

ILLINOIS: Chicago, Oct. 10-12. Superintendent of Registration, Mr. Charles F. Kervin, Capitol Bldg., Springfield.

INDIANA: Indianapolis, June 1951. Exec. Sec., Miss Ruth V. Kirk, 1138 K. of P. Bldg., Indianapolis 4.

IOWA: *Written.* Des Moines, Dec. 4-6. Acting Director, Division of Examination and Licensure, State Department of Health, 1027 Des Moines St., Des Moines.

MAINE: Portland, Nov. 14-15. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

MARYLAND: Baltimore, Dec. 12-15. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1.

MINNESOTA:* Minneapolis, Oct. 17-19. Sec., Dr. J. F. Du Bois, 230 Lowry Medical Arts Bldg., St. Paul 2.

NEBRASKA:* June 1951. Director, Mr. Oscar F. Humble, Room 1009, State Capitol Bldg., Lincoln.

NEW HAMPSHIRE: Concord, Sept. 13. Sec., Dr. John Samuel Wheeler, 107 State House, Concord.

NEW JERSEY: Trenton, Oct. 17-20. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO:* Santa Fe, Oct. 9-10. Sec., Dr. Charles J. McGoey, Coronado Building, Santa Fe.

NEW YORK: New York, Buffalo, Albany and Syracuse, Oct. 3-6. Sec., Dr. Jacob L. Lochner, 23 S. Pearl St., Albany.

NORTH CAROLINA: *Reciprocity.* Raleigh, Sept. 25. Sec., Dr. Ivan Procter, 226 Hillsboro St., Raleigh.

NORTH DAKOTA: Grand Forks, Jan. 3-6. Sec., Dr. C. J. Glaspel, Grafton.

OHIO: Columbus, December. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

PENNSYLVANIA: Philadelphia, January 1951. Acting Secretary, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

PUERTO RICO: *Examination.* Santurce, Sept. 5-9. Sec., Mr. Luis Cueto, Coll. Box 3717, Santurce.

TEXAS:* Fort Worth, November 1950. Sec., Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth.

WEST VIRGINIA: Charleston, Oct. 2-4. Sec., Dr. N. H. Dyer, State Capitol, Charleston 6.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ALASKA: *Examination.* Juneau, last week in August. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

ARKANSAS: Little Rock, Oct. 3-4. Sec., Mr. L. E. Gebauer, 1002 Donaghey Bldg., Little Rock.

COLORADO: *Examination.* Denver, Sept. 13-14. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 3.

DISTRICT OF COLUMBIA: Washington, Oct. 23-24. Dr. Daniel L. Seckinger, 4130 E. Municipal Bldg., Washington.

FLORIDA: Jacksonville, Nov. 11. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

IOWA: Des Moines, Oct. 10. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

MICHIGAN: *Examination.* Ann Arbor, Oct. 13-14. Sec., Miss Eloise LeBeau, 101 North Walnut Street, Lansing 15.

MINNESOTA: Minneapolis, Oct. 3-4. Sec., Dr. Raymond N. Bieter, 105 Millard Hall, University of Minnesota, Minneapolis 14.

NEBRASKA: *Examination.* Omaha, Oct. 3-4. Director, Mr. Oscar F. Humble, Room 1009, State Capitol Building, Lincoln 9.

NEW MEXICO: *Examination.* Santa Fe, Sept. 17. Sec., Mrs. Marguerite K. Cantrell, Box 1522, Santa Fe.

OKLAHOMA: *Examination.* Oklahoma City, Sept. 15. Sec., Dr. Clinton Gallaher, 813 Braniff Building, Oklahoma City.

OREGON: *Examination.* Portland, Sept. 9. Sec., Dr. C. D. Byrne, University of Oregon, Eugene.

RHODE ISLAND: *Examination.* Providence, Nov. 8. Chief, Division of Professional Regulation, Mr. Thomas B. Casey, 366 State Office Building, Providence.

SOUTH DAKOTA: Vermillion, Dec. 1-2. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

TENNESSEE: Memphis, Sept. 21-22. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis 3.

TEXAS: *Examination.* Austin, October. Sec., Brother Raphael Wilson, 306 Nalle Building, Austin.

WISCONSIN: *Examination.* Milwaukee, Dec. 2. Sec., Mr. W. H. Barber, Scott and Watson Sts., Ripon.

Coming Medical Meetings

Alaska Territorial Medical Association, McKinley Park, Aug. 17-19. Dr. William P. Blanton, Box 2569, Juneau, Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, The Homestead, Hot Springs, Va., Sept. 7-9. Dr. Leroy A. Calkins, University of Kansas Medical Center, Kansas City 3, Secretary.

American Congress of Physical Medicine, Boston, Aug. 29-Sept. 1. Dr. Richard Kovacs, 2 E. 88th St., New York City 28, Secretary.

American Hospital Association, Atlantic City, Sept. 18-22. Mr. George Bugbee, 18 E. Division St., Chicago 10, Executive Director.

Biological Photographic Association, Hotel Sheraton, Chicago, Sept. 6-8. Mr. Lloyd E. Varden, Pavelle Color, Inc., 533 W. 57th St., New York City 19, Secretary.

Colorado State Medical Society, Broadmoor Hotel, Colorado Springs, Sept. 20-23. Mr. Harvey T. Sethman, 1612 Tremont Place, Denver 2, Executive Secretary.

Idaho State Medical Association, Sun Valley, Sept. 6-9. Dr. Alfred M. Popma, 220 N. First St., Boise, Secretary.

Indiana State Medical Association, French Lick, Sept. 25-27. Mr. Ray E. Smith, 23 E. Ohio St., Indianapolis 4, Executive Secretary.

Kentucky State Medical Association, Brown Hotel, Louisville, Sept. 26-28. Dr. Bruce Underwood, 620 S. Third St., Louisville 2, Secretary.

Michigan State Medical Society, Book-Cadillac Hotel, Detroit, Sept. 20-22. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing 8, Secretary.

Mississippi Valley Medical Society, Springfield, Ill., Sept. 27-29. Dr. Harold Swanberg, 510 Maine St., Quincy Ill., Secretary.

National Medical Association, Hampton Institute, Hampton, Va., Aug. 28-Sept. 1. Dr. John T. Givens, 1108 Church St., Norfolk 10, Va., General Secretary.

New Hampshire Medical Society, Mt. Washington Hotel, Bretton Woods, Sept. 10-12. Dr. Deering G. Smith, 44 Chester St., Nashua, Secretary.

Oregon State Medical Society, Gearhart, Sept. 27-29. Dr. Werner E. Zeller, Medical-Dental Bldg., Portland 5, Secretary.

Southwestern Surgical Congress, Shirley-Savoy Hotel, Denver, Colo., Sept. 25-27. Dr. C. R. Rountree, 525 N.W. Eleventh St., Oklahoma City, Secretary.

Vermont State Medical Society, Mt. Washington Hotel, Bretton Woods, N. H., Sept. 10-12. Dr. James P. Hammond, 128 Merchants Row, Rutland, Secretary.

Washington State Medical Association, Davenport Hotel, Spokane, Sept. 10-13. Dr. James W. Haviland, 338 White-Henry-Stuart Bldg., Seattle, Secretary.

Wyoming State Medical Society, Cody, Sept. 7-9. Dr. George H. Phelps, 1604 Capitol Ave., Cheyenne, Secretary.

International Meetings

International Conference of Speech and Voice Therapy, Amsterdam, Holland, Aug. 21-26. Dr. Deso A. Weiss, 106 E. 85th St., New York City 28, Secretary.

International Congress on Cardiology, Paris, France, Sept. 3-9. Dr. Mouquin, 78 rue de l'Abbé-Groult, Paris 15e, France, Secretary-General.

International Congress on Criminology, Palais de la Sorbonne Grand Amphitheater, Paris, France, Sept. 10-19. M. Pierre Piprot d'Alleaume, 188 Ave. Victor Hugo, Paris 16e, France, General Secretary.

International Congress on Diseases of the Chest, Carlo Forlanini Institute, Rome, Italy, Sept. 17-22. Prof. A. Omodei Zorini, Carlo Forlanini Institute, Rome, Italy, Chairman.

International Congress of Experimental Cytology, New Haven, Conn., U. S. A., Sept. 4-8. Dr. Danielli, King's College, London, England, Secretary.

International Congress on Internal Medicine, Paris, France, Sept. 11-14. Prof. Justin Besancon, 38 rue Barbet de Jouy, Paris, France, Secretary.

International Congress of Microbiology, Rio de Janeiro, Brazil, Aug. 17-24. Dr. Olympio de Fonseca, Institut Oswaldo Cruz, Rio de Janeiro, Secretary.

International Congress of Psychiatry, Palais de la Sorbonne, Paris, France, Sept. 19-27. Dr. Henri Ey, 1 rue Cabanis, Paris 14e, France, General Secretary.

International Physiological Congress, Copenhagen, Denmark, Aug. 15-18. Dr. Göran Liljestrand, Karolinska Institutet, Stockholm, Sweden, Secretary.

International Society of Haematology, Copenhagen, Denmark, Aug. 15-18. Dr. Martin Hynes, Cambridge University, England, Secretary.

International Society for the History of Medicine, Amsterdam, Holland, Aug. 14-20. Professor Guiart, 58 Blvd. de la Croix Rousse, Lyon, France, Secretary.

International Society for Internal Medicine, Paris, France, Sept. 11-15. Dr. Albert M. Snell, 102 Second Ave. S.W., Rochester, Minn., Chairman, American Committee.

International Union Against Tuberculosis, Copenhagen, Denmark, Sept. 1-8. Prof. Etienne Bernard, 66 Blvd. St. Michel, Paris 6e, France, Secretary.

Medical Women's International Association, Philadelphia, Penna., U. S. A., Sept. 11-15. Dr. Montreuil-Straus, 75 rue de l'Assomption, Paris, France, Secretary.

World Federation for Mental Health, Cité Universitaire, Paris, France, Aug. 31-Sept. 7. Secretary, 19 Manchester St., London, W.1, England.

DEATHS

Hunt, Westley Marshall ✦ New York; born in Auburn, Me., in 1888; Dartmouth Medical School, Hanover, N. H., 1913; formerly clinical professor of otology at University and Bellevue Hospital Medical College, where he was an instructor and lecturer; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology, American Laryngological Association, the American Laryngological, Rhinological and Otological Society, of which he had been vice president, American Otological Society and the American Broncho-Esophagological Association; fellow of the American College of Surgeons; formerly vice president of the American Society for the Hard of Hearing; served during World War I; consultant for the Huntington (N. Y.) Hospital, Staten Island (N. Y.) Hospital and Hospital for Special Surgery; affiliated with St. Luke's Hospital and director of surgery at Manhattan Eye, Ear, Nose and Throat Hospital, where he died July 28, aged 61, of coronary disease.

Jones, Allen Arthur ✦ Buffalo; born in Maitland, Ont., Canada, June 13, 1864; University of Buffalo School of Medicine, 1889; adjunct professor of medicine at his alma mater from 1898 to 1915, associate professor from 1915 to 1921, professor from 1921 to 1929 and professor emeritus since 1929; specialist certified by the American Board of Internal Medicine; secretary of the Section on Practice of Medicine of the American Medical Association, 1897-1898 and chairman, 1910-1911; past president of the Medical Society of the State of New York, American Gastro-Enterological Association and the Alumni Association of the University of Buffalo; fellow of the American College of Physicians, of which he had been vice president in 1939; member of the American Heart Association; affiliated with Millard Fillmore and Buffalo General hospitals; died June 19, aged 86, of coronary occlusion.

Smith, Morris Kellogg ✦ Staten Island, N. Y.; born in Hanover, N. H., March 18, 1886; Dartmouth Medical School, Hanover, 1911; associate professor of clinical surgery at Cornell University Medical College; specialist certified by the American Board of Surgery; member of the American Surgical Association and Society of Clinical Surgery; fellow of the New York Academy of Medicine and American College of Surgeons; served during World War I; received the Bronze Star for meritorious service during World War II; attending surgeon at St. Luke's Hospital in New York from 1934 to 1947 when he became consulting surgeon; chief of surgical service at Halloran Veterans Administration Hospital; died in Short Hills, N. J., July 1, aged 64, of malignant melanoma.

Andrews, Charles James ✦ Norfolk, Va.; Medical College of Virginia, Richmond, 1902; specialist certified by the American Board of Obstetrics and Gynecology; member of the Southeastern Surgical Congress and South Atlantic Association of Obstetricians and Gynecologists, of which he had been president; fellow of the American College of Surgeons; past president of the Tri-State Medical Association of the Carolinas and Virginia Norfolk County Medical Society and the Virginia Obstetrical and Gynecological Society; affiliated with Norfolk General Hospital; consultant in obstetrics and gynecology, U. S. Naval Hospital, Portsmouth; director of the Southern Bank of Norfolk; died June 19, aged 73, of cerebral vascular occlusion.

Atkinson, Daniel Armstrong Jr., West View, Pa.; University of Pittsburgh School of Medicine, 1935; served during World War II; member of the American Medical Association; affiliated with Suburban General Hospital, Bellevue; died June 3, aged 39, of coronary occlusion.

Bauch, Solomon Stan ✦ Prescott, Ariz.; Long Island College Hospital, Brooklyn, 1912; member of the Medical Society of New Jersey, American College of Chest Physicians and the American Trudeau Society; past president of the New York Physicians' Art Club; served with the Veterans Administration center in Whipple; died June 2, aged 67, of coronary occlusion.

Bay, William Frederick, Bradenton, Fla.; Ohio Medical University, Columbus, 1894; member of the American Medical Association; formerly affiliated with the U. S. Veterans Bureau; died recently, aged 76, of hypostatic pneumonia and cerebral embolus.

Bower, Jacob ✦ New York; Cornell University Medical College, New York, 1909; specialist certified by the American Board of Radiology; affiliated with Montefiore Hospital and Lebanon Hospital, where he died June 27, aged 63, of coronary thrombosis.

Brundage, Carl Langley ✦ Oklahoma City; University of Oklahoma School of Medicine, Oklahoma City, 1920; associate professor of dermatology and syphilology at his alma mater; member of the American Academy of Dermatology and Syphilology; affiliated with Mercy, Wesley and University hospitals and with St. Anthony Hospital, where he died June 2, aged 55, of cerebral hemorrhage.

Cannon, Martin Loeb ✦ Washington, D. C.; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1932; formerly a pharmacist; chief medical officer of the district jail; died June 26, aged 48, of coronary disease.

Dick, John Frederick, Flushing, N. Y.; Long Island College Hospital, Brooklyn, 1900; member of the American Medical Association; veteran of the Spanish-American War; for many years affiliated with Flushing Hospital; died June 18, aged 71, of coronary thrombosis.

Dietz, Frank J., St. Louis; Beaumont Hospital Medical College, St. Louis, 1900; died in Santa Monica, Calif., June 15, aged 71, of injuries received when struck by an automobile.

Divine, Alice ✦ Ellenville, N. Y.; Cornell University Medical College, New York, 1900; served on the staffs of Kingston City (N. Y.) Hospital, New York Infirmary for Women and Children, New York, and Veterans Memorial Hospital, where she died June 28, aged 82.

Duncan, Ernest Allen ✦ El Paso, Texas; Western Reserve University Medical Department, Cleveland, 1909; served during World War I; during World War II an examining physician for the El Paso Selective Service Board; consultant on the staffs of Southwestern General, Hotel Dieu, Sisters' and Providence Memorial hospitals and St. Joseph's Sanatorium; died recently, aged 64.

Elder, Roy Porter ✦ Portsmouth, Ohio; Starling-Ohio Medical College, Columbus, 1910; medical examiner for the Norfolk and Western Railroad; died June 12, aged 67, of coronary thrombosis.

Emery, William Franklin, Ashland, Ohio; Western Reserve University Medical Department, Cleveland, 1897; past president and secretary of the Ashland County Medical Society; for many years affiliated with Samaritan Hospital; died May 20, aged 77.

English, Chester Ferrin ✦ Winsted, Conn.; St. Louis University School of Medicine, 1912; died May 29, aged 62.

Ensign, Duane Edwin, McGraw, N. Y.; Eclectic Medical Institute, Cincinnati, 1888; member of the American Medical Association; died in Cortland June 15, aged 90, of influenza.

Espenlaub, George Henry, Evansville, Ind.; Indiana University School of Medicine, Indianapolis, 1922; died in Protestant Deaconess Hospital May 31, aged 52.

Farmer, Joseph Arthur ✦ Hartford, Conn.; Rush Medical College, Chicago, 1940; specialist certified by the American Board of Psychiatry and Neurology; member of the Southern Psychiatric Association, American Psychiatric Association and Association for Research in Nervous and Mental Diseases; served during World War II; formerly affiliated with the Institute of Living; on the staff of Hartford Hospital; died June 28, aged 37.

Feltwell, Myrtle R., Imperial, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1904; member of the American Medical Association; at one time practiced in Sewickley, where she was affiliated with the Sewickley Valley Hospital for many years; died June 16, aged 70.

Fenn, Joseph Wallace, Nashville, Tenn.; University of Alabama School of Medicine, 1911; state medical officer for the Tennessee Selective Service headquarters during World War II and later served overseas; served during World War I; died June 21, aged 66.

Field, Everett Howard, Portland, Ore.; University of Vermont College of Medicine, Burlington, 1908; died June 13, aged 78.

Fox, Lorah O., Ansted, W. Va.; College of Physicians and Surgeons, Baltimore, 1910; president of Ansted National Bank; died July 6, aged 60, of heart disease.

✦ Indicates Fellow of the American Medical Association.

Fuller, Enoch Leon, Greenville, Miss.; University of Tennessee Medical Department, Nashville, 1909; died in Baptist Memorial Hospital, Memphis, June 7, aged 74, of diabetes mellitus and pulmonary carcinomatosis.

Gilbert, Judson Bennett ✦ Schenectady, N. Y.; Syracuse University College of Medicine, 1926; specialist certified by the American Board of Urology; member of the American Urological Association; fellow of the American College of Surgeons; affiliated with Schenectady City Hospital and Ellis Hospital, where he died May 31, aged 51, of malignant hypertension.

Goddard, Anthony Marvin, Morrisville, Vt.; University of Vermont College of Medicine, Burlington, 1897; affiliated with Copley Hospital; died May 17, aged 76.

Gordon, Isaac Louis ✦ Jersey City, N. J.; Medical School of Maine, Portland, 1915; served overseas during World War I; affiliated with Greenville Hospital; died in Salt Lake City June 30, aged 60.

Henderson, George Dallas ✦ Holyoke, Mass.; Western Reserve University Medical Department, Cleveland, 1900; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; served during World War I; consultant in internal medicine at Belchertown (Mass.) State School and Westfield (Mass.) State Sanatorium; affiliated with Holyoke Hospital; died in Peter Bent Brigham Hospital, Boston, June 15, aged 75, of lymphatic leukemia.

Hodgson, William Henry ✦ Cranston, R. I.; Georgetown University School of Medicine, Washington, D. C., 1928; member of the American Association of Industrial Physicians and Surgeons; affiliated with St. Joseph's Hospital, where he died June 3, aged 49, of carcinoma of the stomach.

Hoel, Kenneth Paul ✦ Aurora, Ill.; University of Wisconsin Medical School, Madison, 1929; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; affiliated with St. Joseph's, St. Charles and Copley hospitals; died in Battle Creek, Mich., July 4, aged 44, of coronary thrombosis.

Hughes, Frederic John ✦ Plainfield, N. J.; Columbia University College of Physicians and Surgeons, New York, 1899; Associate Fellow of the American Medical Association; served in France during World War I; for many years affiliated with Muhlenberg Hospital in Plainfield; on the boards of the New Jersey Sanatorium for Tuberculosis Diseases in Glen Gardner and the Bonnie Burn Sanatorium in Scotch Plains; died June 16, aged 74, of coronary thrombosis.

Huston, John Walter ✦ Asheville, N. C.; Rush Medical College, Chicago, 1904; member of the American College of Chest Physicians; past president of the Buncombe County Medical Society; at one time president of the board of health in Virginia, Ill.; affiliated with Zephyr Hill Sanatorium, of which he was co-founder, and Biltmore and Asheville Colored hospitals; died June 12, aged 74.

Jantzen, Francis Thomas ✦ Boston; Harvard Medical School, Boston, 1908; fellow of the American College of Surgeons; affiliated with Carney Hospital, Boston City Hospital and St. Elizabeth's Hospital, where he died June 2, aged 64.

Jarrell, Foster ✦ Hot Springs National Park, Ark.; Tulane University of Louisiana School of Medicine, New Orleans, 1914; for many years county coroner; served in France during World War I; died in St. Joseph's Infirmary May 31, aged 63.

Jerger, Joseph Ambrose ✦ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; affiliated with Chicago Memorial Hospital; died July 4, aged 69, of carcinoma of the lung with metastases.

Jones, Harold Eldred ✦ Chicago; Northwestern University Medical School, Chicago, 1909; formerly on the faculty of the University of Illinois College of Medicine; served during World War I; affiliated with Michael Reese and St. Luke's hospitals; died July 9, aged 62, of coronary thrombosis.

Keen, Glover Thomas ✦ Cincinnati; University of Cincinnati College of Medicine, 1933; died June 23, aged 52, of cerebral thrombosis and arteriosclerosis.

Kenton, Forest Reese, Memphis, Tenn.; Memphis, (Tenn.) Hospital Medical College, 1912; died June 15, aged 71, of cerebral hemorrhage.

Kerr, Homer Lanson ✦ Crane, Mo.; St. Louis College of Physicians and Surgeons, 1901; member of the House of Delegates of the American Medical Association from 1938 to 1941; past president of the Missouri State Board of Health and Missouri State Medical Association; president of the Bank of Crane; died June 18, aged 73, of carcinoma of the throat.

Law, Thomas F., Washington, D. C.; College of Physicians and Surgeons, Baltimore, 1906; died June 30, aged 71, of cerebral hemorrhage.

Macleod, Mary Adelaide Gaston, Long Beach, Calif.; Northwestern University Woman's Medical School, Chicago, 1902; died May 10, aged 71, of ruptured appendix and peritonitis.

Potter, George Walter, St. Augustine, Fla.; Jefferson Medical College of Philadelphia, 1902; member of the American Medical Association; for 37 years on the staff of the East Coast Hospital, where he died June 8, aged 77, of coronary thrombosis.

Rawls, Vance Quitman, Brewton, Ala.; University of Louisville (Ky.) School of Medicine, 1929; member of the American Medical Association; died in April, aged 44, of pulmonary tuberculosis.

Rosenberg, Jacob Joseph ✦ Portland, Ore.; Denver and Gross College of Medicine, 1907; past president of staff of Good Samaritan Hospital; died in St. Vincent's Hospital June 17, aged 65, of coronary occlusion.

Savoy, Walter Stanford, Washington, D. C.; Howard University College of Medicine, Washington, 1918; for many years affiliated with Freedmen's Hospital, where he died June 13, aged 58, of a fractured skull received in a fall.

Schoofs, Orlando Peter ✦ Milwaukee; Marquette University School of Medicine, Milwaukee, 1916; assistant clinical professor of otolaryngology at his alma mater; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Oto-Laryngology; affiliated with St. Joseph's Hospital; died June 8, aged 55, of coronary thrombosis.

Shimberg, Mandell ✦ Tarrytown, N. Y.; Syracuse University College of Medicine, 1920; certified by the National Board of Medical Examiners; specialist certified by the American Board of Physical Medicine and Rehabilitation; served during World War I; chief of physical medicine at Veterans Administration Hospital in Montrose; died June 24, aged 56, of coronary thrombosis.

Sibley, Samuel James, Memphis, Tenn.; Memphis Hospital Medical College, 1906; member of the American Medical Association; member of the honorary staff of St. Joseph Hospital, where he died June 4, aged 80, of cerebral thrombosis.

Simpson, Jesse Hall ✦ Louisville, Ky.; University of Louisville Medical Department, 1907; died June 1, aged 67, of cerebral hemorrhage.

Smith, Ernest V., Sr., ✦ Fond du Lac, Wis.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1907; fellow of the American College of Surgeons; formerly fellow in surgery at the Mayo Clinic, Rochester, Minn.; affiliated with St. Agnes Hospital; died June 17, aged 70, of diabetes mellitus.

Smith, William Earl ✦ Stamford, Conn.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1910; fellow of the American College of Surgeons; associated with Stamford and St. Joseph's hospitals; died in Fort Erie, Ont., Canada, June 22, aged 65, of coronary occlusion.

Sonnenschein, Harry David ✦ New York; University and Bellevue Hospital Medical College, New York, 1911; specialist certified by the American Board of Orthopaedic Surgery; member of the American Academy of Orthopaedic Surgeons and American Association of Industrial Physicians and Surgeons; fellow of the American College of Surgeons; served overseas during World War I; associated with the Hospital for Joint Diseases; died June 27, aged 59.

Stalvey, John Kelley, Conway, S. C.; Medical College of South Carolina, Charleston, 1907; killed instantly July 5, aged 77, in an automobile accident near Myrtle Beach.

Stroud, C. Malone ✦ St. Louis; Washington University School of Medicine, St. Louis, 1926; president of St. Louis Society for Crippled Children; member of the National Gastroenterological Association and the American Academy of Allergy; affiliated with Barnes and Deaconess hospitals; died June 24, aged 46, of an accidental gunshot wound.

Tillman, John S., Clio, Ala.; Medical Department of Grant University, Chattanooga, Tenn., 1907; member of the American Medical Association; served as vice president of the Medical Association of the State of Alabama; died in Beard Memorial Hospital, Troy, June 8, aged 68, of coronary thrombosis.

Tomlinson, William ✦ Seaford, Del.; Medico-Chirurgical College of Philadelphia, 1902; member of the Medical Society of the State of Pennsylvania; died May 31, aged 79, of carcinoma of the bladder.

FOREIGN LETTERS

ITALY

(From a Regular Correspondent)

FLORENCE, June 5, 1950.

Experimental Vaccination Against Tuberculosis

Professor Buonomini reported to the medicosurgical society of Pisa the results of experimental vaccination against tuberculosis. He used the method of Rosenthal and Birkang, which consists of the endermic injection of anatuberculin by multiple acupuncture. The vaccine employed was Petragnani's anatuberculin, concentrated and incorporated into a fatty excipient to facilitate cutaneous absorption. The concentration of dead tuberculous bacilli present in the vaccine-ointment varied from 10 to 20 per cent; the number of acupunctures for the inoculation of the vaccine into the dermis varied from thirty to forty for each application; the applications were repeated two or three times at intervals of forty days. The test of allergic reactivity carried out by intradermal inoculation of anatuberculin for diagnostic purposes showed that this method can produce a strong immunizing action in a high percentage of persons, analogous to that obtained in control patients, inoculated by intradermal administration of 0.30 cc. of anatuberculin in two divided doses.

Application of the vaccine-ointment by cutaneous scarifications or through repeated massages on the slightly abraded skin did not result in development of allergy in any person.

The results obtained with experimental vaccination by means of multiple acupuncture favor the supposition that a protective immunity against all types of tuberculous diseases develops in the subject. The experimental infection test, at present in progress, may or may not confirm this concept.

Course in International Medical Law

The third course in International Medical Law was held in Florence at the School of Military Health of the Italian Army. Surgeon General Giulio Voncken of the Belgian Army came specially from Liège for his lectures. He recalled that as far back as 1934 a Committee of military physicians and legal experts gathered in the principality of Monaco to study the principles of ethics by which a World Code of Medicine should be inspired. Many of these principles are adopted at present by various nations, but without uniformity, and they may be found here and there in the various international covenants dealing with human rights, as in the humanitarian covenant established in Geneva in August 1949. It is necessary to coordinate such principles, to complete and assemble them in one single code which should be adopted by all the civilized nations. The International Medical Law, so instituted, should be made the subject of teaching at universities.

Pathology of Deficiency Diseases

Professor Sotgiu discussed in Ferrara the pathologic factors of dietary or metabolic deficiency. Deficiency diseases have been classified according to the etiologic, pathogenetic and clinical points of view. He subdivided deficiency diseases into the generic syndrome of inadequate nutrition and the syndromes of specific deficiency. The generic syndrome is based on a symptomatic triad common to many other diseases, namely, asthenia, emaciation and anemia of various degrees. The picture is intensified in the severer forms without losing its generic character, especially in the acute form of experimental inanition. In the chronic form additional symptoms occur by which the deficiency disease resembles more closely Simmonds' disease (hypopituitary cachexia), but in the cachexia caused by denutrition the endocrine glands are not spared although other organs of more fundamental vital importance are, such as the heart and the nervous system.

In inanition neither a special endocrine syndrome nor avitaminosis occurs. In fact, hormones and vitamins become practically useless in absolute inanition. The lack of protein seems to become fused with total deficiency, of which it would otherwise be the determining factor, and the impairment due to total lack of protein is more serious than that due to a corresponding mild protein deficiency. It will be possible in time to recognize aspects of disease resulting from a deficiency of a single amino acid as it is possible at present to detect the deficiency of a single vitamin; attention is called to the existence of "proteopenic" anemia. Interesting characteristics appear in some endogenous deficiencies (called "dysmetabolic") due to defective utilization of some foods. In general one has to deal with qualitative disorders, which often may be controlled as if they were only quantitative, by giving large doses of the element which is not utilized, for example, iron administration in essential hypochromic anemia. Some modern biochemical concepts such as that of competitive antagonists may explain this characteristic peculiarity of many metabolic deficiency diseases.

ISRAEL

(From a Regular Correspondent)

JERUSALEM, July 5, 1950.

The Situation of Physicians in Israel

The February 1949 foreign edition of *Harefu'ah*, the journal of the Jewish Medical Association in Israel, under the heading "Private Doctor's Anxiety," states, among other things, that the doctors in Israel have for many months viewed their economic future with ever growing concern. In Jerusalem the situation of the doctors broke down after the beginning of the year, and all those not employed either full time or part time by some institution—and they constituted the great majority—were and still are finding themselves in a grave financial position indeed. All doctors suffered a severe reduction of their income when the mobilization started, which meant that the inhabitants by the scores of thousands had to join the army and that not only they themselves but also their families were incorporated as members of the Sick Fund Society, belonging to the Labor Organization. It employs salaried doctors only and resists the free choice of doctors by the patients.

Jewish doctors in the former Palestine were never especially well off. A considerable percentage of them always had great difficulty in making both ends meet, but at present even those who previously seemed to be well established are hard hit. If this state of affairs were only part of the general sufferings of war, such as is the lot of every citizen of Israel, the physician would have to put up with conditions without complaint or accusation and would try to help the badly affected and wait for better times after the cessation of hostilities. But the chief anxiety of the doctor is caused by his conviction that it is not only the war which has brought about his plight and that peace will not restore his former condition. There are many indications that certain groups are using the war only as a welcome opportunity for furthering their political aims, although they may ruin the medical profession in Israel. They intend to introduce general medical insurance of the population without previous negotiation or discussion and without the least regard for the fate of the doctors.

In 1940 the General Sick Fund Society employed about 570 doctors (Statistical Report about Jewish Doctors in Palestine by Prof. S. Bacchi and S. Grossmann), 250 of them on a part time basis. They had to care for about 300,000 persons and H. Abeles estimates that there is one full time doctor for every 790 sickness fund members. Thus, if the society has two and a half times as many members, they will employ two and one half times as many doctors. Consequently there will not be more than 800 to 900 full time doctors. Statistics of Bacchi and Grossmann show that in 1946 only 315 doctors found employment in the rest of the medical institutions (including hospitals), chiefly in part time work. Even assuming that all these will get full time jobs in the institutions, only 1,015 to 1,100 doctors will be fully employed. Can the shrinking private clientele (at best not more than 10 per cent of the population) give subsistence to another 1,500 doctors? To that the answer is a blunt no. Only a very small percentage of the remainder subsist on private practice. This state of affairs means the ruin of the great majority of the members of the medical profession in Israel.

In the meantime (to the beginning of 1950) 800 new doctors have come to Israel, mainly from the Balkan countries and from Germany and Austria. Their settling down was entirely a matter of chance, with the exception of 150 absorbed by the military forces. Most of these doctors have no instruments of their own; many of them had been unable to practice for many years. Statistics from the years 1940-1942 showed 45.9 doctors for every 10,000 Jews in Palestine. In the United States in 1942 there were 13.3 doctors for every 10,000 inhabitants, and in England 9.4. The Ministry of Health counted the number in Israel in 1950 and states that 2,801 doctors are now in Israel, 504 of whom are women and 100 of whom do not practice; 1,297 are over 50 years of age. Only 1,305 of the 2,801 have private practices, while the others are employed either full time or part time by the medical institutions.

The situation has not changed essentially, as compared with previous years. The fact that only half of the doctors in Israel can make a living with their private practices show the severe difficulties prevailing in the medical profession today. The economic condition of the private practitioners appears, in this light, not dissimilar to that of the doctors employed in government services. A warning strike was carried through by doctors and medical personnel of all government hospitals of the country in the beginning of May 1950. Its cause was the refusal of the government to grade salaries and to improve working conditions. This refusal has led to a shortage of suitable specialists in the government hospitals and immigrant camps, as noted by Dr. Z. Avigdori, chairman of the Central Commission of the Israel Medical Association, and Dr. P. Noack, chairman of the Association of Government Physicians.

Poliomyelitis Epidemic in Israel

Poliomyelitis was quantitatively negligible in Israel during the last few years, averaging 2 cases monthly from May 1948 to April 1949. During the summer of 1949, however, the number of cases began to increase. From September 1949 to March 1950 an average of 20 to 30 cases per month occurred in a population of about 1,000,000. April and May, 1950, showed a further increase, with 86 cases reported in April and 334 in May. Deaths also increased, with 40 fatalities in the 334 cases reported in May 1950. To April 1950 the percentage of cases reported by age groups was infants and children up to 2 years 68 per cent and children 2 to 5 years 25 per cent; 93 per cent of all cases struck children under 5 years of age. This picture is typical for the beginning of an epidemic, as has also been observed in other countries.

The disease has spread over almost the entire country, leaving comparatively free only the northeast region with a chiefly rural population. Half of the cases occurred in children's homes and camps for immigrants. It is therefore most probable that the infection was spread by adult camp workers. It appears that these persons, suffering from a febrile illness not diagnosed, contributed to the further spread of the disease. The period of incubation was in several cases of contact ascertained as between thirty and thirty-two days.

To prevent further contagion, the government prohibited all summer camps as well as the inoculation of infants against diphtheria, whooping cough and smallpox. Vaccination with BCG is continued.

BCG Vaccination in Israel

The large number of new immigrants with tuberculosis caused prophylactic measures to be taken against the spread of the disease in Israel. The government, in collaboration with the International Organization Against Tuberculosis (INTUCAM) made tuberculosis tests compulsory for all inhabitants of Israel aged 1 to 18 years and optional for all others up to 30 years. In October 1949, 300,000 children were examined with the special assistance of Dr. Knud Winge, director of INTUCAM. Half the cost of the examinations, tests and subsequent vaccinations was borne by the Israel government and half by the International Organization Against Tuberculosis. The latter in turn was supported by the World Health Organization, with the participation of the UNICEF (United Nations International Child Emergency Fund) and the Scandinavian Red Cross. Less than 15 per cent of the first 1,000 school children tested proved immune against tuberculosis. In this connection it is remarkable that the pupils first tested belonged to an agricultural school (Mikve Israel).

To February of this year 106,968 persons were tested, and 70,651 received BCG vaccination. Six medical teams under the direction of Dr. Olle Horovitz worked in the campaign. Of all the persons tested, 23,214 were immune. Owing to the continuous immigration, the campaign cannot possibly reach all the children. The Ministry of Health is therefore planning to build its own BCG laboratory in Israel, and blueprints have already been sent to Copenhagen, Denmark, for approval.

The Danish government intends to make funds available for a tuberculosis hospital near Jerusalem.

Prolapse of the Mucous Membrane of the Stomach into the Duodenum

At a meeting of Jerusalem physicians Drs. A. Spighel and S. Samuelson reported on prolapse of the mucous membrane of the stomach into the duodenum. During recent years this condition has been diagnosed in several clinical cases. The authors believe these to be the first cases verified in Israel. The uncharacteristic symptoms consist of spasms in the epigastrium, a feeling of fulness and nausea. Periodic attacks of pain are typical. Three cases form the basis for their report, in which they referred to papers of Rees, Melamed, Wilson, Scott and others. Opinion differs as to the mechanism causing the disease. Pathologic failure of the inherent stretch mechanism of the folds of the mucous membrane and the subsequent possibility of a shift of the mucous membrane into the duodenum are assumed as most likely. The reasons for the occurrence can be manifold. Neuromuscular factors as well as secondary inflammations, congestions and nutritional disturbances of the ventricular mucosa can be responsible. Decisive for the diagnosis is the result obtained by roentgen examination. Unlike an ulcer, which exhibits a positive roentgenographic shadow, the prolapsus shows a negative shadow. Samuelson demonstrated a particularly impressive case in which a genuine ulcer had developed on the mucous membrane prolapsed into the duodenum. The ulcer perforated and could be confirmed surgically.

CORRESPONDENCE

PREVENTION OF BLINDNESS IN THE NEWBORN

To the Editor:—I cannot subscribe to the use of penicillin and silver nitrate prophylaxis against ophthalmia neonatorum as reported in THE JOURNAL of June 17, 1950, page 635. I had a scientific exhibit at the American Medical Association Convention in Chicago, in 1948, pointing out the shortcomings of silver nitrate. I particularly emphasized that prophylaxis of the mother, especially with antibiotics, would obviate the necessity for drugs or chemicals in the eyes of the newborn. It was further pointed out that, since the medical profession was in the habit of putting something in the eyes of the newborn, penicillin was the product of choice. Statistics of experience were posted at the exhibit. At the American Academy of Pediatrics, April 1, 1950, I presented a paper indicating that silver nitrate was on the way out.

At the Philadelphia General Hospital an experiment was conducted by the State Department of Health for a period of one year in which 1,400 consecutive newborns were treated with silver nitrate and a like number with a penicillin solution. As a result of this survey the Eye Department of the Philadelphia General Hospital holds that penicillin is a far better prophylactic than silver nitrate.

It was further pointed out that since the termination of the experiment silver nitrate was used exclusively for a period of nine months and that 14 cases of gonorrheal ophthalmia developed despite the use of silver. It was also pointed out that gonorrheal ophthalmia was cured with penicillin in each of the 14 cases.

The experiment at the Philadelphia General Hospital was duplicated by Dr. Sacks-Wilner as reported in the *Archives of Ophthalmology* (April 1949). This proved beyond doubt that penicillin prophylaxis is more efficacious than silver. Dr. Sacks-Wilner reported the use of penicillin in the form of an ointment. A report on the use of penicillin in the *Annales D'Oculistique* (November 1948) indicates that penicillin was used in the eyes of 2,000 newborn infants. One case of gonorrheal ophthalmia developed and was cured by penicillin without any damage to the eyes.

At the meeting of the American Medical Association last year in Atlantic City, Dr. Allen Woods of the Wilner Institute reported, ". . . we have had ample experience to prove the value of penicillin as a prophylactic agent and that the time has arrived when health laws should be modified to permit the use of antibiotics in the prevention of ophthalmia neonatorum."

Last year I wrote to 85 ex-residents of the Wills Eye Hospital located in various parts of the United States. I asked one question: "Have you ever seen or do you have knowledge of a single instance of blindness or partial blindness in the newborn caused by the mistaken use of 5, 10, or 20 per cent silver nitrate"? Seventeen physicians said they had personally seen or had knowledge of one or more cases of damage to the eyes caused from the mistaken use of silver nitrate in dilutions of 5, 10, or 20 per cent. One prominent eye physician reported on twins—one was blinded in both eyes and the other in one eye.

Several reports published regarding the use of silver nitrate speak of the irritating quality of silver nitrate. Not a single report of recent years has been published stating that silver nitrate has any value in the treatment of gonorrheal ophthalmia.

It has been my opinion and is my opinion today, that silver nitrate as a prophylactic agent is on the way out.

LOUIS LEHRFELD, M.D.
Chairman, Eye Section,
Philadelphia County Medical Society.

INFECTIOUS MONONUCLEOSIS

To the Editor:—In a recent paper entitled "Aureomycin in Infectious Mononucleosis" by Seifert, Chandler and Van Winkle (THE JOURNAL 142:1133 [April 15] 1950) is contained the statement "We do not subscribe to the belief of Davidsohn that there must be a positive heterophil titer after adsorption on guinea pig kidney before the diagnosis can be made." I have never made a statement, in writing or otherwise, justifying the belief attributed to me in the article. As a matter of fact, I expressed myself to the contrary and have recognized the existence of two forms of infectious mononucleosis: a seropositive and seronegative (THE JOURNAL 108:289 [Jan. 23] 1937).

I do believe that the differential test for infectious mononucleosis makes it possible to recognize some cases of the disease which could not be recognized without it, especially when the presumptive test (heterophile antibody test) shows a titer of 1:56 or less. I have seen repeatedly cases of infectious mononucleosis with titers of heterophilic antibodies of only 1:56 or 1:28 which were found serologically positive with the differential test, by demonstrating the failure of the guinea pig kidney antigen to remove the agglutinin for sheep red cells. The main point is that the differential test is qualitative and specific while the heterophile antibody test is quantitative and nonspecific.

It would be unwise to deny that there are cases of infectious mononucleosis with negative presumptive and differential reactions, just as there are cases of syphilis with negative results of complement fixation and flocculation tests or cases of typhoid with negative Widal reactions. In view of the fact that the differential test reduces the incidence of negative results, it is wise to exert caution in the diagnosis of infectious mononucleosis in the presence of a negative serologic reaction.

I. DAVIDSOHN, M.D., Chicago.

DRUG SAMPLES

To the Editor:—Regarding the question of drug samples sent to physicians, I think something should be done to stop the tremendous yearly waste which this amounts to. I, for one, do not advocate the distribution of drug samples to the patient by the physician. It detracts from the art and the practice of medicine. I do say, however, that reputable drug companies act in good faith when they distribute their samples.

Rather than discard these drug samples, which probably cost thousands of dollars per year, I suggest that doctors have them ready for collection regularly by a representative of their local county and state medical societies. While these drug samples are distributed in small size packages providing one or two trial doses, thousands of these small packages of the same drug would total a substantial supply from all over the country. This work could possibly be handled by one of the subagencies of the American or International Red Cross. They are experienced in these matters and would know how to deal with the cost involved, relabeling and shipping. They did this work in the last world war.

This pool of Council-accepted drugs could then be made available to destitute European and Asiatic countries where such products as vitamins, iron pills, tonics and cough medicines would do some good. The distribution of the latter should, of course, be under the supervision of the proper foreign medical authorities.

In a way, this would enhance the world prestige of American medicine. I believe that these drug samples could be put to good use also in American charity wards.

HERMAN FRACK, M.D., Oak Park, Ill.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Chiropractic Practice Acts: Requirements for Reciprocity Certificate (South Carolina).—The plaintiff filed suit to require the defendant board of chiropractic examiners to issue him a license to practice. From an adverse judgment, the plaintiff appealed to the Supreme Court of South Carolina.

The plaintiff possessed a license to practice chiropractic issued by the state of Kentucky and he sought a South Carolina license by virtue of that fact. The South Carolina statute permits reciprocal registration under the following section: "Any person of good moral character licensed by a chiropractic board of any other state whose requirements are commensurate with the requirements of this board, on the payment of $40, shall be granted a license to practice in this State." The South Carolina statutes also provide "No person shall be granted a license to engage in the practice of chiropractic in this State unless such applicant therefor shall be a graduate of a school or college of Chiropractic accredited by the South Carolina Board of Chiropractic Examiners and shall have received a minimum of four years' training in such school or college." Kentucky's requirements, however, said the Supreme Court, were not commensurate with ours because that state granted a license without completion by the plaintiff of the minimum four years' college training which is requisite under our law. The plaintiff introduced in evidence a diploma from the Palmer School of Chiropractic, dated July 17, 1947, whereby a degree of Doctor of Chiropractic was conferred upon him but written on the face of the document was the following: "Three-Year Course." The plaintiff also presented a statement of the school that he had enrolled on January 3, 1946 and interrupted his training on October 13, 1947, after having completed 3,796 forty-five minute hours of training.

The statute, said the Supreme Court, unequivocally requires graduation upon a minimum of four years' training in school or college. College years are commonly known to be about nine months in length, with three months' vacation between them. Thus four years of college is equivalent to about thirty-six months. A contraction of that to eighteen or nineteen months, even without interruption for a vacation period, is plainly not the standard prescribed by the statute. The plaintiff endeavored, however, to convert the years mentioned in the statute into hours and to qualify for license under a rule of the defendant board which he introduced in evidence, in part as follows: "In order to gain recognition by this Board of Examiners, a school or college of Chiropractic must teach a standard curriculum consisting of a minimum of four years, of not less than thirty-six hundred hours, an hour to consist of not less than forty-five minutes. The course must be of non-repetitious instruction. A school transcript of credits must accompany application, together with high school and Chiropractic diplomas or photographs of same."

If this may be construed to reduce the minimum requirement of the statute, said the Supreme Court, it is of course ineffective to that extent at least. Moreover, to have the effect of law it must have been filed in the office of the Secretary of State and published, of which there is no record.

Finally, the plaintiff attempted to support his case by producing as witnesses two persons who, it appears from the testimony, were licensed by reciprocity at about the time that plaintiff was refused, upon three-year diplomas and with less "hours"; but that testimony, said the Supreme Court, even if competent under our former decision is irrelevant upon the question of the plaintiff's qualifications. The fact, if it be conceded, that the board failed to enforce the law in other cases is no reason for judicial coercion to another violation, which this would clearly be.

Accordingly the judgment of the trial court refusing to require the defendant board of chiropractic examiners to issue the plaintiff a license was affirmed.—*Lake v. Mercer, 58 S. E. (2d) 336 (S. C., 1950).*

Malpractice: Failure of Osteopath to Ligate Ruptured Cervical Artery Following Childbirth.—The plaintiff, on behalf of himself and his four children, filed suit as administrator of his wife's estate for damages alleged to have been caused by the negligence of the defendant osteopaths. From a judgment in favor of the plaintiff, the defendants appealed to the Supreme Court of Oregon.

The defendants raised several objections to the trial court's rulings relating to certain hypothetical questions, but the Supreme Court held that the rulings were correct. The defendants then contended that the plaintiff failed to produce substantial evidence that the defendants were guilty of negligence and that such negligence caused the death of the deceased.

The evidence establishes that after the child was delivered, the deceased was wheeled from the delivery room into a two-bed ward, where she was placed in a bed; that about forty-five minutes thereafter, she complained that she felt as though she was lying "in a puddle." Her husband discovered a large amount of blood in the bed, whereupon he summoned a nurse. Treatment from that time was as follows: The nurse inserted a small packing in the vaginal opening and administered pituitary extract to stop the bleeding. Defendant Overton was called and immediately began massaging the deceased's uterus, which massaging was continued constantly until death approximately two hours later. Defendant Rhoads arrived shortly after Overton, removed the small packing and inserted a speculum for the purpose of packing the uterus but did not examine the vagina or uterus. He then repacked the lower segment of the uterus with a large pack; blood plasma was thereupon administered. It is borne out by the admission of Rhoads that the deceased became weaker and finally passed away because of loss of blood. It is further established that the defendants did not at any time make an examination of the cervix or of the uterus to determine the cause of bleeding; in fact, Rhoads admits this. Rhoads further testified as follows:

"Q. But ruptured cervical arteries are not rare? A. They are not rare. We see many of those.

"Q. And the procedure is to tie the artery? A. Yes.

"Q. It is not ordinarily necessary to open the patient up to do that? A. That's right."

There is medical testimony, the court continued, that if bleeding continues after the uterus has been massaged from two to five minutes, the proper practice requires an examination to determine if there is a piece of afterbirth remaining or if there is a laceration of the cervix. This examination was not made. There was further competent testimony that tying of the artery would be the proper way of stopping the bleeding, and that the location of the ruptured artery was such that this could have been accomplished. Medical testimony tends to establish that the defendants in the treatment of the deceased did not exercise that degree of skill and care ordinarily exercised in the practice of surgery in the locality under like circumstances.

From the foregoing, the Supreme Court concluded, it appears that there was substantial evidence for the jury to determine that the defendants were negligent in failing to locate and to tie the ruptured cervical artery and that such negligence caused the deceased to bleed to death. Accordingly the judgment of the trial court in favor of the plaintiff was affirmed.—*Stroh v. Rhoads et al., 217 P. (2d) 245 (Ore., 1950).*

Admissibility in Evidence of Medical Books or Treatises.—The plaintiff, widow of the deceased, filed a claim for death benefits under the workmen's compensation act. From a judgment in her favor, the defendant appealed to the Supreme Court of Ohio.

The deceased was struck on the back of the neck or the lower portion of the back of the head by a 10 or 12 inch (25 or 30 cm.) metal pin weighing between 1 and 3 pounds (0.5 and 1.3 Kg.). The accident occurred on March 11, 1943, and the deceased continued to work until March 30, when he was taken to a hospital. He died on April 1 from a cerebral hemorrhage. Among other questions raised on appeal, was whether or not the trial court erred in admitting in evidence three pages from a medical book.

One of the principal questions to be decided by the jury was whether or not the cerebral hemorrhage was caused by the

blow received by the deceased on March 11. There was substantial evidence tending to prove that a cerebral hemorrhage could not be the result of such a blow received twenty days before. The testimony of defendant's witness, Dr. Kramer, was to the effect that it could not. On cross examination, Dr. Kramer was asked whether he had ever heard of a particular book, "Injuries of the Skull, Brain and Spinal Cord," edited by Samuel Brock. He answered in the negative. He was then asked whether he was familiar with the medical publishing house which had published that work and admitted that it was "a recognized medical publishing house." On further inquiry, the witness stated that he had heard of Dr. Friedman, who was referred to in the book, and that the physician was a recognized man in his field. Plaintiff's counsel then read to the witness a portion of Brock's book, stating conclusions of Dr. Friedman, and asked the witness whether he agreed with those conclusions. The witness indicated that he did not agree with some of them. Plaintiff's counsel questioned the witness further with regard to the conclusions of Dr. Friedman, and the witness in his answers indicated that those conclusions may have related to cases involving conditions different from those involved in the decedent's case. Plaintiff's counsel further read to the witness portions from this book by Brock as to conclusions of two other doctors and questioned the witness about them. The witness gave somewhat similar answers on how and why he differed with those conclusions of the two other physicians. The portions of the book so read to Dr. Kramer indicated that a cerebral hemorrhage could result from a blow received a substantial time before such hemorrhage occurred. At the conclusion of the cross examination of Dr. Kramer, three pages of Brock's book were admitted in evidence.

The great weight of authority, said the Supreme Court of Ohio, holds that medical books or treatises, even though properly identified and authenticated and shown to be recognized as standard authorities on the subjects to which they relate, are not admissible in evidence to prove the truth of the statements therein contained. Even when such a book or treatise merely recites facts observed by the writer and the opinions of the writer, admission in evidence of such a book or treatise or any part thereof would, in effect, admit into evidence the testimony of the author of the book without affording to opposing counsel any opportunity to cross examire him and without having required the author to take the usual oath required of a witness. If this kind of evidence were admitted, a person could find a book which supported his case and by introducing it or a part of it in evidence, have a witness in the jury room on his side of the case, even though such witness had not been under oath and had not been subject to cross examination.

Apparently recognizing the rule of law, that such books or treatises or parts thereof are not admissible to prove the truth of statements therein contained, the plaintiff argued that the three pages of Brock's book were not offered or admitted in evidence for that purpose. If that was not the purpose, said the Supreme Court, we fail to see what possible purpose could have been served. Dr. Kramer did not deny that the statements read to him did appear in the book. Even if he had denied that such statements were in the book, we have difficulty in understanding how the fact that such statements were in the book, could be relevant to any issue in the instant case. Since Dr. Kramer did not deny that the statements read to him were in the book, then there certainly could be no reason for offering the book, apart from an effort to make certain that the contents of those statements would influence the jury. These statements were read to Dr. Kramer. His failure to deny that they were in the book could only tend to destroy the effect of his testimony, to the extent that his testimony was inconsistent with the statements. It might have been proper, in cross examination of Dr. Kramer, to question him on the basis of his conclusions and even to ask him whether those conclusions were based in any way on statements found in medical books or treatises. However, it is difficult to understand how inquiries with respect to statements in a particular book would be proper if it had not first been brought out that Dr. Kramer based his conclusions in some way on statements in that book. If Dr. Kramer denied that he had known about this particular book, it is difficult to see how his further cross examination with regard to the book would be proper at all.

The brief outline hereinbefore given as to the cross examination of Dr. Kramer, with regard to Brock's book, emphasizes, continued the Supreme Court, the error of the trial court in admitting that book, or any part of it, in evidence. The portions of the book read to Dr. Kramer during his cross examination did not even relate to conclusions or observations of the editor. Instead they related to conclusions and observations of Dr. Friedman and of other physicians which he had apparently heard of and was merely repeating. It appears further that the conclusions of Dr. Friedman and of those other doctors were based in part on what others had told them. Therefore, even if the editor of the book had taken an oath as a witness and been subject to cross examination by opposing counsel, he would not have been permitted to testify as to the conclusions of these other doctors, based partly on their observations and on the observations of persons who had told these other doctors about facts observed. In other words, if Brock had been a witness under oath and subject to cross examination in this lawsuit, his testimony on the statements read to Dr. Kramer and contained on pages 119, 120 and 121 of his book would have been inadmissible as hearsay.

The Supreme Court therefore concluded that it was improper for the trial court to admit in evidence the three pages from the Brock book and that in doing so the trial court committed prejudicial error. Accordingly the judgment of the trial court was reversed and the cause remanded for a new trial.—*Hallworth v. Republic Steel Corporation, 91 N.E. (2d) 690 (Ohio, 1950).*

Medical Practice Acts: Use of Injunction to Restrain Unlawful Practice of Medicine by Chiropractor.—The state board of medical examiners filed suit to restrain the defendant chiropractor from engaging in the practice of medicine without a license. From a judgment of the trial court in favor of the defendant, the board appealed to the Supreme Court of Indiana.

The medical practice act of Indiana permits the board to make use of the injunctive process in order to restrain a person from practicing medicine until he has obtained a license to do so, and the Supreme Court of the state has held that the practice of chiropractic is the practice of medicine.

The evidence in this case revealed that on May 2, 1949, the defendant was practicing chiropractic in Columbia City, Whitley County, Ind., and was called a "Drugless Physician"; that one of the witnesses went to his office for treatment of an injury; that there were several people ahead of her in the waiting room; that the defendant, after interviewing the witness, gave an adjustment on her spine and neck; that she paid for the treatment, and that one of the exhibits shows that the defendant held himself out as "Dr. Joseph W. Hayes, Chiropractor." The defendant testified that he practiced with a doctor in Fort Wayne in the summer of 1941 and opened his office in Columbia City on Sept. 5, 1941; that he had two years' training at a chiropractic college; that in his practice he does not use medicine, do surgery or practice obstetrics; that he is purchasing equipment, his home and his office. The Clerk of the Whitley Circuit Court testified that he has charge of all of the records relative to the issuance of licenses to practice medicine in any of its forms in Whitley County; that, after an examination of the drugless license record and the regular license record, he found that the defendant does not have a license; that any license issued to chiropractors would be in those records, and that they are the only records pertaining to licenses for the practice of healing arts.

The defendant contended on appeal that the trial court had authority to exercise judicial discretion in denying the issuance of the injunction.

The Supreme Court said that since the evidence in this case is undisputed and uncontradicted that the defendant is practicing medicine without a license, the trial court had no discretion but, as a matter of law, should have granted the temporary injunction. Accordingly the judgment of the trial court in favor of the defendant was reversed, and the trial court was directed to grant the temporary injunction sought by the board of medical examiners.—*State ex rel. Board of Medical Registration & Examination v. Hayes, 91 N. E. (2d) 913 (Ind., 1950).*

CURRENT MEDICAL LITERATURE

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Clinical Pathology, Baltimore

20:305-402 (April) 1950

Accessory Pancreatic Ducts of Major Duodenal Papilla: Normal Structures to be Differentiated from Cancer. G. S. Loquvam and W. O. Russell.—p. 305.

Studies on Postmortem Chemistry. H. N. Naumann.—p. 314.

In Vitro Susceptibility of Pathogenic Staphylococci to Seven Antibiotics (Penicillin, Streptomycin, Bacitracin, Polymyxin, Aerosporin, Aureomycin and Chloromycetin) with Note on Changing Resistance of Staphylococci to Penicillin. M. Finland, P. F. Frank and C. Wilcox.—p. 325.

In Vitro Susceptibility of Hemophilus Influenzae to Seven Antibiotics (Penicillin, Streptomycin, Bacitracin, Polymyxin, Aerosporin, Aureomycin and Chloromycetin). M. Finland and C. Wilcox.—p. 335.

Enzyme Studies on Human Blood: VII. Prothrombin as Determined with Isolation Technic in Patients Receiving Bicumarol. G. Y. Shinowara and W. B. Smith.—p. 341.

Effect of Intravenous Administration of Large Doses of A and B Substances. C. McNeil, F. H. Covington and M. M. O'Donnell. p. 349.

Renal Tubular Necrosis Produced by India Ink and Carmine. R. Altschul and F. A. Hummason.—p. 356.

Electrolytic Resistance of Blood Clot in Thrombocytopenia and Its Relationship to Platelet Concentration. H. H. Henstell and I. S. Henstell.—p. 362.

Cardiolipin Antigens in Serodiagnosis of Syphilis: Comparison with Standard Tissue-Extract Antigens. J. M. Blumberg, J. B. Hartney and M. O. Dimmock.—p. 367.

American J. Digestive Diseases, Fort Wayne, Ind.

17:105-136 (April) 1950

Incidence and Significance of Hypoglycemia in Unselected Admissions to Psychosomatic Service. H. R. Landmann and R. L. Sutherland. —p. 105.

Sensitivity of Salmonellae and Shigellae to Streptomycin. O. Felsenfeld, I. F. Volini and L. M. Gonzales.—p. 108.

Gastro-Intestinal Manifestations of Porphyria. L. Berlin and R. Cotton. —p. 110.

Omental Apoplexy: Idiopathic Segmental Infarction of Greater Omentum. J. A. Graham and S. A. Levinson.—p. 114.

*Contraindications to Punch (Aspiration) Biopsy of Liver. W. P. Kleitsch and J. H. Kehne.—p. 118.

Peptic Ulcer in Man: Part 3. Evaluation of Ulcer Therapy. S. P. Bralow, M. Spellberg, H. Kroll and H. Necheles.—p. 119.

Gastric Function and Metabolism of Carbohydrates. G. Papayannopoulos and N. Athanasopoulos.—p. 124.

Effect of Mineral Oil Upon Fecal Consistency, Fecal Bulk and Velocity of Gastro-Intestinal Transport. H. E. Paul and M. F. Paul.—p. 125.

Contraindications to Punch Biopsy of Liver.—According to Kleitsch and Kehne the primary indication for trephine biopsy of the liver is hepatomegaly of uncertain causation. In such cases trephine biopsy will be relatively harmless and seldom associated with complications, unless too deep a penetration is made. Attempts to needle a small liver are dangerous because of the ease with which a loop of bowel can be perforated. The authors never do needle biopsies if the liver edge cannot be definitely palpated. A prolongation of the clotting or bleeding time should contraindicate this procedure. In some cases it may be possible to lessen the bleeding time of the patient by the administration of vitamin K, but should the hemorrhagic diathesis persist the procedure should not be attempted. Another important contraindication is obstructive jaundice, the reason being that dilatation of the peripheral biliary radicles will make perforation of one of them by the aspirating needle a likely possibility. When one of these dilated biliary radicles is perforated it will tend to establish a biliary fistula which, in turn, will produce a bile peritonitis. The authors describe such an experience which followed needle biopsy of a patient in whom jaundice was due to carcinoma of the head of the pancreas.

American Journal of Medical Sciences, Philadelphia

219:353-472 (April) 1950

Action of Sulphur Compounds on Carbohydrate Metabolism and on Diabetes. B. A. Houssay.—p. 353.

Capillary Fragility Studies in Diabetes Mellitus and Use of Rutin in Diabetic Retinitis. R. H. Barnes.—p. 368.

Reversibility of Glycogen Nephrosis in Alloxan-Treated Diabetic Rats. S. L. Robbins.—p. 376.

Diagnosis and Treatment of Tuberculous Meningitis in Children. E. M. Lincoln and T. W. Kirmse.—p. 382.

Masked Myocardial Infarction. H. N. Hill.—p. 394.

*Penicillin in Treatment of Diphtheria. H. B. Bruyn, H. Brainerd and B. W. Leppla.—p. 408.

Antigen Tracer Studies and Histologic Observations in Anaphylactic Shock in Guinea Pig: Part two. F. J. Dixon and S. Warren. —p. 414.

Reaction of Tissues to Administration of Pyrogenic Preparation from Pseudomonas Species. W. F. Windle, W. W. Chambers, W. A. Ricker and others.—p. 422.

Infarction of Appendices Epiploicae with Report of Three Cases and Brief Review of Literature. D. Rosenbaum and C. C. Kissinger. —p. 427.

Present Status of Penicillin in Treatment of Syphilis in Pregnancy and Infantile Congenital Syphilis. N. R. Ingraham Jr. and H. Beerman.—p. 433.

Otolaryngologic Manifestations of Blood Dyscrasias: Clinicopathologic Review. L. R. Limarzi.—p. 443.

Penicillin in Diphtheria.—Bruyn and his associates report observations on 147 patients with diphtheria; 62 of these were treated with antitoxin alone and 85 with antitoxin plus penicillin. The mortality rate was slightly higher and the incidence of neurologic complications decidedly higher, but myocarditis was less frequent in the group given penicillin in addition to the antitoxin. The diphtheria organisms showed a tendency to disappear from the nose or throat culture slightly earlier in those receiving penicillin than in the patients receiving antitoxin alone.

American Journal of Medicine, New York

8:409-558 (April) 1950

Use of Hyperimmune Antirabies Serum Concentrates in Experimental Rabies. H. Koprowski, J. Van der Scheer and J. Black.—p. 412.

*Tuberculous Peritonitis Treated with Streptomycin. R. H. Wichelhausen and T. McP. Brown.—p. 421.

Determination of C-Reactive Protein in Blood as Measure of Activity of Disease Process in Acute Rheumatic Fever. H. C. Anderson and M. McCarty.—p. 445.

Zoster-Like Eruptions Caused by Virus of Herpes Simplex. H. B. Slavin and J. J. Ferguson Jr.—p. 456.

Cause of Death in Meningococcic Infection: Analysis of 300 Fatal Cases. W. B. Daniels.—p. 468.

Abdominal Pain in Dissecting Aneurysm of Aorta. D. C. Levinson, D. T. Edmeades and G. C. Griffith.—p. 474.

Tuberculous Peritonitis Treated with Streptomycin.—Wichelhausen and Brown treated 26 patients having tuberculous peritonitis with streptomycin. A favorable response was obtained in all except 1 patient who had coexisting pulmonary tuberculosis and died. Four of the improved patients had a relapse. Two of them responded to a second course of streptomycin; 1 failed to respond. One patient was not retreated and died following a relapse. Most patients had been seriously ill. The rapidity of response, the subsidence of fever and abdominal symptoms, the general improvement, the objective improvement observed in three follow-up laparotomies and the fact that 6 patients have returned to work are indications of the effect of the drug. Daily dosage of streptomycin varied between 1 and 3 Gm. given intramuscularly in two to six divided doses. Total dosage per patient varied from 42 to 254 Gm. for a single course. One of the 4 patients treated with two courses received

a total of 349.2 Gm. With these doses streptomycin blood levels between 1.25 and 40 micrograms were obtained. In one patient whose blood levels varied between 3.2 and 15.2 micrograms an ascitic fluid streptomycin level of 11.7 micrograms was obtained, indicating that there is adequate diffusion of streptomycin into the abdominal cavity. Duration of therapy varied between twenty-one and one hundred thirty-seven days. Although immediate improvement after streptomycin therapy was excellent in most cases, the development of new extraperitoneal lesions during and after therapy and the persistence of histologic evidence of tuberculosis in 2 cases make the prognosis uncertain.

American Journal of Physiology, Baltimore

161:1-198 (April) 1950. **Partial Index**

Sex Hormonal Effects in Incipient Biotin Deficiency. R. Okey, R. Pencharz and S. Lepkovsky.—p. 1.
Plasma Factor Increasing Circulatory Leukocytes. B. Steinberg and R. A. Martin.—p. 14.
Burning of CT To CO_2 by Isolated Tissues as Shown by Use of Radioactive Carbon. R. T. Clark Jr., J. N. Stannard and W. O. Fenn. —p. 40.
Intragastric Pressure Which Abolishes Secretion of Acid. R. Roback, M. I. Grossman and A. C. Ivy.—p. 47.
Role of Adrenaline in Respiratory Response to Hypoxemia. R. W. Stacy and D. O. Demunburn.—p. 51.
Osmometric Analysis of Thirst in Man and Dog. A. V. Wolf.—p. 75.
Central Nervous Control of Rhythmic Variations of Blood Pressure. B. P. Babkin and W. C. Kite Jr.—p. 92.
Circulatory Responses to Hemorrhage in Dog. J. W. Remington, W. F. Hamilton, H. M. Caddell and others.—p. 106.
Physiologic Characteristics of Regenerating Mammalian Nerve and Muscle. J. D. Thomson, J. A. Morgan and H. M. Hines.—p. 142.

American Journal of Surgery, New York

79:487-616 (April) 1950

Segmental Resection in Pulmonary Surgery. E. M. Naclerio and L. A. Hochberg.—p. 488.
Female Urethra: Histologic Study as Aid in Urethral Surgery. J. V. Ricci, J. R. Lisa and C. H. Thom.—p. 499.
Chemical and Hematologic Observations After Topical Urethane Therapy. C. W. Howe.—p. 506.
Simultaneous Pregnancies in Fallopian Tube and Bicornate Uterus Associated with Three Fallopian Tubes: First World Case Report and Review of Literature. P. Thorek, J. Moses and J. Wong.—p. 512.
Smooth Muscle Tumors of Stomach. J. W. Cole and F. M. Barry. —p. 524.
Spontaneous Cure of Aneurysms and Arteriovenous Fistulas, with Notes on Intrasaccular Thrombosis. H. B. Shumacker Jr. and E. E. Wayson. —p. 532.
Benign Fibrous Stenosis of Bile Ducts. R. F. Carter, G. M. Saypol and L. R. Slattery.—p. 545.
Duodenal Stump Leakage: Causes and Prevention. J. R. Robinson. —p. 549.
Intra-Abdominal Approach to Inguinal Herniorrhaphy. P. Jacobson. —p. 557.
Appendiceal Tumors. R. M. Hyman.—p. 569.
Transarticular Pin Fixation in Fracture Dislocations of Ankle. J. T. F. Gallagher.—p. 573.

79:617-752 (May) 1950

Suppurative Complications of Thoracico-Abdominal Wounds. J. P. Lynch.—p. 621.
Arterial Bloodletting During Operation as Aid in Hemostasis. W. J. Gardner and D. E. Hale.—p. 635.
*Addison's Disease and Pregnancy. F. Brent.—p. 645.
Chorio-Epitheliomatous Elements Occurring in Teratoma of Testis. C. P. Gray, J. R. McDonald and G. J. Thompson.—p. 653.
Early Care of the Traumatized Hand with Pedunculated Flaps. G. K. Lewis.—p. 660.
Surgical Revision of Arthritic Feet. J. A. Key.—p. 667.
Intussusception in the Adult. J. L. Donhauser and E. C. Kelly.—p. 673.
Causes and Methods of Repair of Direct and Recurring Inguinal Hernias. J. K. Holloway and R. J. Johnson.—p. 678.
Physiologic Effect of Massive Small Intestinal Resection and Colectomy. J. E. McClenahan and B. Fisher.—p. 684.
Analysis of Mechanical Principles as Applied in Traction of Fractures of Femur. E. H. Weissenberg and W. Swienty.—p. 689.
Malignant Melanoma. R. Kerin and R. Katzenstein.—p. 694.
Perianal Infection in Tuberculous Patient: Surgical Notes. J. Gerendasy.—p. 701.

Addison's Disease and Pregnancy.—Brent reviews 39 previously reported cases in which Addison's disease concurred with pregnancy and cites an additional case which terminated fatally after a cesarean operation. Latent Addison's disease in a woman may become active when she becomes pregnant and will manifest itself most commonly during the first trimester or the puerperium. The symptoms of Addison's disease may mask those of pregnancy and vice versa. Modern therapy has greatly lessened the risk of Addison's disease associated with pregnancy. If adequate treatment of the disease is possible, induced abortion is not necessary, on the contrary, it is inadvisable, because surgical interventions greatly increase the risk of the disease. The therapeutic abortion may do more harm than good. A pregnant woman with Addison's disease requires constant observation and may have to be hospitalized for supervision during the first trimester of pregnancy and during delivery and the puerperium. The danger of Addison's disease seems to be increased by spontaneous premature delivery as well as by cesarean section or other operative intervention at term. Spontaneous delivery at term insures the best results.

Am. J. Syphilis, Gonorrhea and Ven. Dis., St. Louis

34:201-300 (May) 1950

Untreated Syphilis in the Male Negro: Observation of Abnormalities Over Sixteen Years. P. J. Pesare, T. J. Bauer and G. A. Gleeson. —p. 201.
Observation on Growth of Nonpathogenic Kazan Strain of Treponema Pallidum in Embryonated Hens' Eggs of Various Ages. M. Haanes, R. H. Wiggall and E. D. DeLamater.—p. 214.
Effect of Subcurative Penicillin Therapy upon Rate of Development of Acquired Immunity in Experimental Syphilis. H. J. Magnuson, F. A. Thompson Jr. and B. J. Rosenau.—p. 219.
*Pathologic Observation of Penicillin-Treated Neurosyphilis. G. D. Gammon, F. H. Lewey, H. Dillon and others.—p. 227.
Pulmonary Arteritis Due to Acquired Syphilis. M. R. Hejtmancik, J. Y. Bradfield and R. H. Rigdon.—p. 236.
Cardiolipin Antigen in Kline Test for Syphilis: III. Further Studies on Optimal Cardiolipin-Lecithin Ratio. S. J. Klein, B. E. Konwaler, C. Sears and others.—p. 245.
Primary Cutaneous Neisseria Gonorrhoeae Infections. M. J. Scott and J. Thomsen.—p. 262.
*Antibiotic Spectrum of Gonococcus. T. M. Gocke, C. Wilcox and M. Finland.—p. 265.
Newer Antibiotics in Treatment of Venereal Diseases. R. C. V. Robinson.—p. 273.

Penicillin-Treated Neurosyphilis.—Gammon and his co-workers report 7 cases of neurosyphilis in which necropsy was performed after treatment with from 1.2 million to 9.6 million units of penicillin. There were 3 cases of paresis, 2 of tabes, 1 of meningovascular neurosyphilis and 1 of meningovascular neurosyphilis associated with optic neuritis. One of the paretic patients died three weeks after treatment with penicillin and showed the usual microscopic tissue changes of the disease. The inflammatory reactions in this case are perhaps to be considered the result of insufficient time for healing and of ineffective treatment. Inflammatory lesions were minimal in the 2 other paretics. One of them presented a picture similar to that of arrested paresis. There was likewise very little inflammatory reaction in the 2 patients with tabes and in 1 patient with meningovascular neurosyphilis. The degree of clearing was such that the diagnosis of syphilis might be in doubt except for the associated degeneration. The evidence suggests that penicillin had cleared the infection, and bears out the implications of the reversal of spinal fluids under this agent.

Antibiotic Spectrum of Gonococcus.—Gocke and co-workers tested the sensitivities of 20 recently isolated strains of Neisseria gonorrhoeae with penicillin, aureomycin, chloramphenicol (chloromycetin®), streptomycin, bacitracin, neomycin, aerosporin, polymyxin and sulfadiazine. An "antibiotic spectrum" for the gonococcus was constructed from the results of these tests. This spectrum indicates the relative activity of these antibacterial agents against this species. The distribution curve of sensitivities for each of the agents which constitute this spectrum reflects the variations in the sensitivity of the individual strains to that agent. Comparison of the activity of the 8 antibiotics and of sulfadiazine on a weight basis showed that penicillin was by far the most active of the agents tested. Aureomycin and chloramphenicol (chloromycetin®) ranked next and showed similar activity. Streptomycin and bacitracin followed and also had about the same activity, these were followed by neomycin, aerosporin and polymyxin. Sulfadiazine was the less active in these tests. Relative minor variations were noted in the action of any one agent against the different strains that were tested except for sulfadiazine and, to a lesser extent, penicillin, which showed rather wide range of sensitivity. This may reflect, at least in part, a selection of rather resistant strains in the case of sulfadiazine in the past through elimination of sulfonamide-sensitive strains in the course of therapy in previous hosts. The same may also be true to some extent for penicillin, and if so it may be one result of its almost universal use in recent years for the treatment of gonococcal infections.

Anesthesiology, New York

11:145-264 (March) 1950. **Partial Index**

Peripheral Vascular Homeostasis in Relation to Anesthetic Agents. S. G. Hershey and B. W. Zweifach.—p. 145.
Polycythemia in Relation to Anesthesia and Surgery. C. M. Barbour Jr. —p. 155.
Evipal Sodium—*d*-Tubocurarine Chloride for Endotracheal Intubation: Preliminary Study. P. P. Volpitto and C. C. Benton.—p. 164.
Physiology of Coronary Circulation. J. E. Eckenhoff.—p. 168.
Clinical Research in Anesthesiology. R. C. Adams.—p. 178.
Intravenous Procaine—Adjuvant to General Anesthesia: Preliminary Report. I. B. Taylor, A. B. Stearns, H. C. Kurtz and others.—p. 185.
Treatment of 2 Cases of Tetanus with *d*-Tubocurarine Chloride in Peanut Oil with Myricin. G. G. Binger and G. Devnich.—p. 199.
Technic and New Laryngoscope for Intubation in Endotracheal Anesthesia. M. S. Lloyd.—p. 206.
Use of Decamethonium Bromide for Production of Muscular Relaxation. L. C. Harris Jr. and R. D. Dripps.—p. 215.
Electrocardiographic Studies During Endotracheal Intubation: I. Effects During Usual Routine Technics. C. L. Burstein, F. J. LoPinto and W. Newman.—p. 224.
Induction of Anesthesia for Suspension Laryngoscopy with Cocaine, Sodium Pentothal and Curare. D. A. Davis.—p. 245.

Annals of Allergy, Minneapolis

8:149-292 (March-April) 1950

*Adrenocorticotropic Hormone (ACTH): Its Effect in Bronchial Asthma and Ragweed Hay Fever. T. G. Randolph and J. P. Rollins.—p. 149.
Id.: Gross and Histologic Effects on Skin Tests and Passive Transfer. M. Zeller, T. G. Randolph and J. P. Rollins.—p. 163.
Concentrated Adrenal Cortex Extract: Its Effect in Bronchial Asthma and Gastrointestinal Allergy. T. G. Randolph and J. P. Rollins. —p. 169.
Relation of Allergy to Character Problems in Children: Survey. T. W. Clarke.—p. 175.
Certain Vascular Effects of Histamine and d-Tubocurarine in Multiple Sclerosis: Part II. H. D. Jonez.—p. 188.
Hypo-Allergic Penicillin. S. W. Simon.—p. 194.
Weekly Mold Survey of Air and Dust in Lexington, Kentucky. M. E. Wallace, R. H. Weaver and M. Scherago.—p. 202.
Study of Antigenicity of Atopic Reagin. M. Scherago and M. Hasson. —p. 212.
Treatment of Hay Fever with Combination of Sympathomimetic and Antihistaminic Drug. M. H. Mothersill.—p. 223.
Comparative Studies of Certain Antihistamine Drugs. N. B. Dreyer. —p. 229.
What Is to Be Our Basic Professional Relationship? C. R. Rogers. —p. 234.
Blood Levels Induced by Penicillin-Antihistamine Preparations. F. J. Murray, B. Taylor and M. J. Foter.—p. 240.

Pituitary Adrenocorticotropic Hormone (ACTH) and Asthma.—Randolph and Rollins treated 13 patients with allergic syndromes. Ten of 11 asthmatic patients, to whom a short course of pituitary adrenocorticotropic hormone had been given, obtained considerable relief for a week to five months following a single course of therapy, ranging in total dosage from 125.0 to 325.0 mg. The other patient developed fluid retention at the usual dosage and showed only slight response at smaller doses. Prolonged continuous administration of the hormone is unnecessary for bronchial asthma, short intermediate courses being adequate. The degree of relief in the 10 cases varied from complete to approximately 50 per cent. Pituitary adrenocorticotropic hormone was least effective in those with pulmonary emphysema and extensive scarring from pleurisy and empyema. The hormone not only relieved the symptoms of bronchial asthma but also changed the reactivity of patients sensitized to food and inhalant allergens. In several instances foods known to produce acute accentuations in bronchial asthma prior to the administration of the hormone were tolerated without symptoms during the course of and for a period of time following therapy. Smaller doses of epinephrine produced relief from an attack of asthma following treatment with the hormone, but this change in the effectiveness of epinephrine was temporary only. Striking results were obtained with the hormone in 3 patients with hay fever due to ragweed. It not only eradicated all symptoms of hay fever, but protected the 3 patients for the remainder of the season. The relief from asthma and rhinitis is usually accompanied by improvement in the general condition. The authors commence treatment with intramuscular administration of 25 mg. of pituitary adrenocorticotropic hormone every six hours. Most adult patients and some children, particularly those with eczema, tolerate pituitary adrenocorticotropic hormone therapy at this dosage for a total of nine doses. Dangers said to be associated with pituitary adrenocorticotropic hormone therapy pertain to long-continued treatment and thus far have not been observed in therapy consisting of short courses.

Annals of Surgery, Philadelphia

131:449-608 (April) 1950

Valvular Anastomosis of Heart Cavities. A. M. Rappaport and A. C. Scott.—p. 449.
Technic of Resection of Coarctation of Aorta with Aid of New Instruments. W. J. Potts.—p. 466.
Carcinoma of Thyroid Gland. G. E. Ward, J. W. Hendrick and R. G. Chambers.—p. 473.
Lymphatic Metastases of Carcinoma of Colon and Rectum. R. S. Grinnell.—p. 494.
*Endometriosis. B. P. Colcock and T. A. Lamphier.—p. 507.
Surgical Treatment of Familial Polyposis of Colon: Report of 7 Cases, 6 in One Family. E. J. Boehme.—p. 519.
*Disruption of Abdominal Wounds. W. I. Wolff.—p. 534.
Delayed Suture of Sensory Nerves of Hand. J. M. Shaffer and F. Cleveland.—p. 556.
Congenital Diverticulum of Posterior Hypopharynx Simulating Atresia of Esophagus. E. S. Brintnall and W. W. Kridelbaugh.—p. 564.
Retroperitoneal Hemorrhage Following Lumbar Sympathetic Block During Treatment with Dicumarol: Report of Fatality. W. R. O'Connor, F. W. Preston and F. V. Theis.—p. 575.
Utilization of Round and Falciform Ligaments as Peritonealizing Structure in Surgery of Upper Abdomen. J. E. Strode.—p. 581.
Significance of Relaxed Inguinal Rings. L. K. Ferguson and M. W. Wolcott.—p. 584.
Two-Rib Incision for Subtotal Esophagectomy. R. Brown.—p. 588.
"Abdominal Apoplexy" Complicated by Mesenteric Venous Thrombosis: Report of Case. F. P. Ross.—p. 952.
Aneurysm of Splenic Artery: Report of 2 Cases. B. Sherwin and H. Gordimer.—p. 599.
Simplified Dermatome for Split Thickness Grafts. W. R. Deaton Jr. and R. W. Postlethwait.—p. 604.

Endometriosis.—Of the 370 patients reviewed by Colcock and Lamphier, endometrial implants were found in the cul-de-sac and on the uterosacral ligaments in 137 patients; 9 patients had endometriosis involving the right and left broad ligaments; the left ovary was involved in 89, the right ovary in 56; in 39 patients the sigmoid and rectosigmoid were involved. The ileum was involved in 6 cases, the cecum and right colon in 3, the fallopian tubes in 7, scar of a previous laparotomy in 2 and the bladder in 1. In 157 of the 370 patients the endometriosis was sufficiently mild to be treated by medical management. In the presence of ovarian enlargement or a mass in the cul-de-sac, particularly in a woman over 40 years of age, ovarian carcinoma should always be considered. It is questionable whether such patients should ever be treated conservatively. The remaining 213 of the 370 patients underwent surgical operation, but in only 118 (or 55 per cent) was the diagnosis made correctly preoperatively. The rate of a correct preoperative diagnosis can be improved if the following clinical aspects are kept in mind: a history of secondary dysmenorrhea; tenderness, nodularity or thickening of the cul-de-sac in the region of the uterosacral ligaments, or ovarian enlargement and sterility or relative sterility. The chief surgical question has always been whether or not castration is necessary in patients with extensive endometriosis. There is an increasing tendency toward use of conservative operative procedures and the avoidance of castration. Patients under 40 years of age should in general have a conservative operation and those over 40 should be subjected to removal of all their ovarian tissue. However, each patient is an individual problem. One hundred and thirty-seven of 213 surgically treated patients were subjected to hysterectomy with removal of all ovarian tissue. Nine of these had had a unilateral oophorectomy previously, but their symptoms had not been relieved. End results following radical surgery were excellent. In 76 patients both ovaries, one ovary, or a portion of one ovary were preserved. Sixty-seven of these (88 per cent) were completely relieved of their symptoms. Six were improved but continued to have some abdominal distress with their menstrual periods. Three patients were not improved. The 88 per cent excellent results after conservative surgery suggest that many patients with external endometriosis should have conservative surgery, particularly if they are under 40 years of age.

Disruption of Abdominal Wounds.—Wolff reviews the records of 45 patients with wound disruption. These cases occurred among 1,700 consecutive abdominal operations, an incidence of 2.6 per cent. Wound disruptions occur with greater

frequency in older patients. The average age in this series was 50 years, as opposed to an average age for patients undergoing laparotomy of 38 years. Since there were few women in this group, the influence of the sex factor could not be estimated, but the literature indicates a higher incidence in males than in females, the ratio being about 2:1. The disruption rate in white patients was 2.9 per cent compared to 0.54 per cent in Negroes. An incidence of 5.1 per cent of wound dehiscence among cancer patients seemed high, but age, debility and hypoproteinemia also seemed to play a part and thus it seems that cancer as such does not predispose to wound disruption. Anemia, deficiency in ascorbic acid and sensitivity to surgical gut could not be indicated as important factors in dehiscence in this series. The type and location of the incision did not seem to affect the disruption rate materially. The McBurney type of incision afforded a high degree of protection. The placing of a viscus in the incision, as in a colostomy or a gastrostomy, increased the risk, while drains did not. Disruptions occurred in several cases in spite of retention sutures. Care and technic in wound closure are extremely important factors. Atraumatic closure of the peritoneal layer is the most essential single aspect. Coughing and vomiting predispose to disruption, and efforts should be directed at their prevention. Early ambulation appeared to be without danger. Two disruptions occurred during tracheal stimulation on the operating table, and others had their start in this manner. Many disruptions start much earlier than the day on which they are discovered. The mortality in this series was 11.1 per cent. Follow-up showed a significant incidence of incisional hernias, many of which result from unrecognized or concealed wound separations.

Archives of Dermatology and Syphilology, Chicago

61:715-886 (May) 1950

Vesicular Darier's Disease (So-Called Benign Familial Pemphigus): Variant of Darier's Disease. F. A. Ellis.—p. 715.
Chronic Benign Familial Pemphigus, Probable Vesicular Variant of Keratosis Follicularis. C. W. Finnerud and F. J. Szymanski.—p. 737.
Ehlers-Danlos Syndrome Associated with Tetralogy of Fallot. E. A. Wallach and E. F. Burkhart.—p. 750.
Diseases of Skin in Pregnancy. G. M. Crawford and R. W. Leeper.—p. 753.
Delayed and Persistent Dermographia. F. Kalz, C. M. Bower and H. Prichard.—p. 772.
Leukoplakia Buccalis. O. G. Hazel, G. W. Charles and L. E. Diamond.—p. 781.
Nature of Skin Lipids in Acne. R. L. Kile, F. H. Snyder and J. W. Haefele.—p. 792.
Lymphoblastoma Cutis: Report of Case Treated with Nitrogen Mustard. A. M. Brixey Jr. and J. H. Lamb.—p. 800.
Sporotrichosis with Asteroid Tissue Forms: Report of Case. H. Pinkus and J. N. Grekin.—p. 813.
Mal de Meleda: Report of Case and Results of Treatment with Vitamin A. M. J. Brunner and D. L. Fuhrman.—p. 820.
Microsporum Gypseum as Etiologic Agent of Tinea in the United States. W. B. Sharp and M. J. Wegner.—p. 824.
Lipomelanotic Reticulosis: Report of 2 Cases in Which Condition Developed into Mycosis Fungoides. S. M. Bluefarb and J. W. Webster.—p. 830.
Actual Cautery Surgery in Dermatology. H. P. Jacobson and D. N. Alcon.—p. 842.

Arch. Indust. Hygiene and Occup. Medicine, Chicago

1:499-600 (May) 1950

Peritoneal Reaction to Injected Fused (Spherical) and Unfused (Spiculate) Quartz: Pathologic Studies. L. Silverman and A. R. Moritz.—p. 499.
Toxic Properties of Xylidine and monomethylaniline: II. Comparative Toxicity of Xylidine ($C_6H_3[CH_3]_2NH_2$) and Monomethylaniline ($C_6H_5N[H]CH_3$) Inhaled as Vapor in Air by Animals. J. F. Treon, H. E. Sigmon, H. Wright and others.—p. 506.
Industrial Employee with Myocardial Infarction: His Ability to Return to Work. R. B. Crain and M. E. Missal.—p. 525.
Toxicologic Studies on Certain Commercial Silicones: II. Two Year Dietary Feeding of "DC Antifoam A" to Rats. V. K. Rowe, H. C. Spencer and S. L. Bass.—p. 539.
Evidence of Systemic Effect of Tetryl with Summary of Available Literature. H. L. Hardy and C. C. Maloof.—p. 545.
Electrostatic Precipitator for Continuous Sampling of Sulfuric Acid Aerosols and Other Air-Borne Particulate Electrolytes. C. Schadt, P. L. Magill, R. D. Cadle and L. Ney.—p. 556.
Air-Ventilated Clothing for Wear in Extremely Hot Environments. J. P. Marbarger.—p. 565.
Indiscriminate Administration of Vitamins to Workers in Industry. Council on Foods and Nutrition and Council on Industrial Health of the American Medical Association.—p. 573.

Archives of Pathology, Chicago

49:503-622 (May) 1950

*Cytochemical Changes of Acute Lupus Erythematosus. P. Klemperer, B. Gueft, S. L. Lee and others.—p. 503.
Thoracic Venous Anomalies: I. Vascular Connection of Left Atrium and Left Innominate Vein (Levoatriocardinal Vein) Associated with Mitral Atresia and Premature Closure of Foramen Ovale (Case 1); II. Pulmonary Veins Draining Wholly Into Ductus Venosus (Case 2). J. E. Edwards and J. W. DuShane.—p. 517.
*Value of Gastric Biopsy Specimens Obtained Through Flexible Operating Gastroscope. E. B. Benedict.—p. 538.
Distribution of Lipase in Preneoplastic and Neoplastic States Induced in Rat Liver by Paradimethylaminoazobenzene. D. D. Mark.—p. 545.
Incipient Squamous Cell Carcinoma of Cervix Uteri. B. Halpert, H. G. Bennett Jr. and W. K. Hartford.—p. 555.
Onkocytes and So-Called Hürthle Cell Tumor. H. Hamperl.—p. 563.
Nature of Lipid of Hyaline Arteriolosclerosis. R. D. Baker and S. P. Kent.—p. 568.
Neurotropic and Viscerotropic Strains of Columbia SK and Encephalomyocarditis Virus. C. W. Jungeblut and E. Steenberg.—p. 574.
Hemorrhagic Encephalopathy Due to Disseminated Thrombocytic Thrombosis: Report of Case. J. P. Wyatt and R. S. Lee.—p. 582.
Histochemical Studies of Skin Wounds in Normal and in Scorbutic Guinea Pigs. H. Bunting and R. F. White.—p. 590.

Cytochemical Changes in Lupus Erythematosus.—Klemperer and his associates observed 4 cases of acute lupus erythematosus with certain tissue changes. The hematoxylin-staining bodies were described by Gross in the endocardium and by Ginzler and Fox in the lymph nodes and kidneys in acute lupus erythematosus. The authors reexamined their cases of acute lupus erythematosus of the past twenty years to obtain information regarding the frequency and the distribution of the hematoxylin-stained bodies. They found the hemotoxylin bodies in 32 of the 35 cases of this disease, often widely distributed throughout the body. They traced the origin of these bodies to a characteristic alteration of the nuclei of mesenchymal cells. The free hematoxylin-staining bodies have been determined by cytochemical methods to contain partially depolymerized desoxyribose nucleic acid. It is assumed that depolymerization of the desoxyribose nucleic acid is the result of a primary enzymatic deviation in the finely adjusted metabolism of this compound rather than the result of anoxia, which may also provoke depolymerization. Attention is called to the similarity of appearance between Hargrave's lupus erythematosus cells in bone marrow aspirates and the free hematoxylin-staining bodies.

Gastric Biopsy with Flexible Gastroscope.—The new operating gastroscope, according to Benedict, is 15 mm. at its largest diameter; it is more flexible than the first model and is easy to pass. This instrument has made it possible to perform gastroscopic biopsy routinely. A total of 63 biopsy specimens was obtained without accident or complication. Gastroscopic biopsy is of value in the differential diagnosis of gastritis and tumor. The relationship of gastritis, ulcer and cancer is not clear. Most observers agree that some gastritis accompanies every ulcer and every tumor but there is a great difference of opinion as to the etiologic role of gastritis (if any) in ulcer or tumor. The author has never been able to demonstrate that gastric ulcer developed in an area of gastritis. Neither has it ever been proved that carcinoma develops from gastritis, although there is some evidence that adenomatous polyps and carcinoma are more common in gastric atrophy. Frequent gastroscopic biopsy may give useful material for study regarding the precursors of ulcer and tumor.

Arkansas Medical Society Journal, Fort Smith

46:203-224 (April) 1950

Rupture of Pregnant Uterus. H. L. Allen.—p. 203.
Anticoagulants in Heart Disease. R. E. McLochlin.—p. 213.

46:225-244 (May) 1950

Practitioner's Problem in Evaluating Thoracic Cases in Light of Modern Antibiotic Therapy. J. K. Donaldson.—p. 225.
Chorioepithelioma. J. Wright.—p. 230.

Connecticut State Medical Journal, Hartford

14:289-380 (April) 1950

Early Medical Practice in Waterbury. S. B. Weld.—p. 303.
Bacitracin. F. L. Meleney and B. A. Johnson.—p. 305.
How Should We Study Primary Glaucoma? E. M. Blake.—p. 308.
Problems in Planning Medical Education. C. N. H. Long.—p. 313.
Aspects of Drug Addiction. J. H. Foster.—p. 316.
Calculated Risk vs. Static Security. V. Bush.—p. 320.

Florida Medical Association Journal, Jacksonville

36:603-666 (April) 1950

*Cancer of Skin in Florida. W. W. Wilson.—p. 619.
Current Concepts in Therapy of Congestive Heart Failure. W. M. Straight.—p. 624.
Observations on Digitoxin. H. Fuller.—p. 629.
Nutritional Appraisal of School Children. W. Wilkins.—p. 632.
Appendicitis in Aged: Report of 5 Cases. R. Herz.—p. 634.

Cancer of Skin in Florida.—Wilson says that cancer of the skin is three or four times more frequent in Florida than in the more northerly regions of the United States. The cancerous skin lesions are more often multiple in Florida than elsewhere. Habitual overexposure of a fair, sensitive skin to the actinic rays of sunlight seems to favor the development of cancer. Skin carcinoma is rare in Negroes. The likelihood of cancer development is augmented by irritation of warts, moles or so-called precancerous lesions, and also if there is contact, occupationally or otherwise, with arsenic or with pitch, tar, paraffin, lubricating oils or other hydrocarbons containing dibenzanthracene or similar carcinogenic substances. In Florida skin cancer is relatively common among fishermen, farmers (including citrus workers), outdoor laborers (painters, carpenters and construction workers) and turpentine and pitch workers. In addition, cutaneous cancer is common among those who engage in outdoor sports such as bathing, fishing, golfing and boating without adequate protection. The method of choice in the treatment of most of these cancers is surgical or electrosurgical removal followed by the use of roentgen or radium therapy.

Gastroenterology, Baltimore

14:455-628 (April) 1950. **Partial Index**

Carcinoma of Colon Complicating Chronic Ulcerative Colitis. W. J. Gleckler and C. H. Brown.—p. 455.
*Surgical Treatment of Chronic Nonspecific Ulcerative Colitis: Results in 106 Cases. C. H. Brown, W. J. Gleckler and T. E. Jones.—p. 465.
Cerebral Cortex and Gastric Motility. B. P. Babkin.—p. 479.
*Liver Function in Chronic Alcoholic Patients: III. Correlation Between Presence of Liver Dysfunction as Indicated by Laboratory Tests and Objective Findings on Examination. W. L. Voegtlin, W. E. Tupper and M. W. Robinson.—p. 485.
*Pathologic Observations in Portal Cirrhosis. W. E. Ricketts, C. C. Lushbaugh, J. B. Kirsner and W. L. Palmer.—p. 491.
Gastric Cancer: Difficulties in Recognition at Laparotomy. J. W. Findley Jr., J. B. Kirsner and W. L. Palmer.—p. 502.
Comparative Study of Cystic Fibrosis of Pancreas and Chronic Calcareous Pancreatitis: Three Case Reports of Calcareous Pancreatitis. J. Solovay and H. U. Solovay.—p. 509.
Proteolysis in Intestinal Disease. S. Warren and S. C. Sommers.—p. 522.
Treatment of Atrophic Gastritis with Liver Extract: Note Recording Equivocal Results. J. W. Findley Jr., J. B. Kirsner and W. L. Palmer.—p. 527.
Death from Cachectic Chronic Gastritis? R. Schindler, M. Benjamin and S. S. Schlosberg.—p. 530.
Use of Anti-Histaminic Drugs for Local Anesthesia for Gastroscopy. J. Reynolds, A. G. Kahn Jr. and J. S. Levy.—p. 535.
Comparison of Quantitative Urinary Urobilinogen Determination (Watson) with Urine Ehrlich Test. W. L. Voegtlin, M. H. Moss and E. March.—p. 538.
Further Observations on Value of Plasma Vitamin: Determinations in Differential Diagnosis of Jaundice. D. P. White, F. C. Bone, J. M. Ruffin and H. Taylor.—p. 541.
Influence of Dispersion upon Absorption of Vitamin A and Fat as Studied by Fluorescence Microscopy. B. W. Volk and H. Popper.—p. 549.

Surgical Treatment of Ulcerative Colitis.—Brown and co-workers subjected to operation 61 women and 45 men with ulcerative colitis. Sixty-nine of these 106 patients were less than 30 years of age, emphasizing that this is essentially a disease of the younger and middle-age-groups. The average duration of the symptoms before surgical intervention was 6.4 years. Ileostomy was performed on 90 patients. Seventeen only of these patients obtained satisfactory results from this intervention alone and did not require further surgery. The disease was so extensive in 26 of the 90 patients that electric surgery was done before a sufficient length of time elapsed to judge the value of the ileostomy alone. Seven patients died, six of these were toxic febrile cases and 1 was moderately toxic. Five patients had satisfactory results and 6 had poor results but had no further surgery. Twenty-nine patients had poor results from ileostomy and further surgery was necessary because of extension or persistence of the disease. Thus only 30 per cent of the patients were benefited by ileostomy alone. It does not put the colon "at rest." The majority of patients require further surgery, such as right and left colectomy and perineal abdominal resection. These interventions proved much less hazardous if done two to six months after the ileostomy. There was no postoperative mortality in the 29 patients on whom further surgery was done at this optimum time, while 8 patients died on whom further surgery was done after an exacerbation of the disease. The procedure of choice in patients who require surgery for ulcerative colitis is an ileostomy followed in two to six months by stage colectomy. Sixteen patients had operative procedures initially other than ileostomy with excellent results in 11. An end-ileostomy and right colectomy may be the procedure of choice for the first operation in patients in particularly good condition. In grouping all the patients together, 60 of the 106 patients obtained excellent results from surgery, 10 others obtained satisfactory results, 11 had poor results and there was an inadequate follow-up on 8. Seventeen patients died within two months of the operation. The 106 patients had 250 operations, making the mortality rate per operation 7 per cent.

Liver Function in Alcoholic Patients.—Voegtlin and co-workers report on 300 chronic alcoholic patients, 78 of whom had no or minimal liver dysfunction, 160 had slight but definite liver dysfunction and 62 had moderate to severe liver dysfunction. The positive findings which accompanied hepatic dysfunction were obesity, evidence of vitamin deficiency, evidence of mild and transitory portal hypertension, pretibial edema, enlargement of the liver without tenderness, transient low grade fever and leukopenia. Objective findings rarely encountered were feminization of the male, vascular nevi, palmar erythema and malar flush, and enlargement of the spleen. The objective findings did not suggest that chronic alcoholics characteristically suffer from portal cirrhosis.

Portal Cirrhosis.—Ricketts and co-workers obtained biopsy specimens from the livers of 32 patients with portal cirrhosis. The patients were classified in three groups, those without clinical symptoms, those with symptoms of moderate severity and the severely ill, jaundiced patients. Repeated biopsy specimens were obtained in 7 patients during the course of medical management. Microscopic examination of the biopsy specimens revealed that there is no relation between the degree of hepatic fibrosis and the clinical symptoms of hepatic failure. No change, either progressive or regressive, occurred in the hepatic fibrosis under adequate dietary management even though the patients became free of symptoms. There was a rough correlation between the degree of parenchymatous change and the severity of hepatic failure. The parenchymatous changes regressed as the patients became free of symptoms under adequate medical management.

Georgia Medical Association Journal, Atlanta

39:145-184 (April) 1950

Neck Dissections. M. B. Hatcher.—p. 145.
Pilonidal Cyst and Sinus: Simple, Ambulatory Surgical Treatment. N. B. Bateman, W. H. Bateman, G. W. Bateman and J. D. Wooddall.—p. 148.
Gastro-Intestinal Allergy in Children. H. W. Muecke.—p. 150.
Newcastle Virus Disease: Report of 4 Probable Cases. E. R. Watson and M. M. Harris.—p. 154.
Masked Hypothyroidism as Basis for Symptoms. W. E. Storey.—p. 156.
Papanicolaou Smear: In Retrospect and Future. J. C. Norris.—p. 168.
New Opportunities and Responsibilities. E. Callaway.—p. 169.

GP (J. Am. Acad. of Gen. Practice), Kansas City, Mo.

1:1-128 (April) 1950

Cancer-Finding Team. L. S. Goin.—p. 27.
Problem of Obscure Fever. F. K. Albrecht.—p. 32.
Troubles in Thorax and Abdomen. W. C. Alvarez.—p. 43.
The Doctor's Bag—What Should Be in It. W. H. Gordon.—p. 51.
Office Pinch Grafting. J. L. Southworth.—p. 55.

Hawaii Medical Journal, Honolulu

9:209-284 (March-April) 1950

When a Plantation Hospital is Discontinued. P. H. Liljestrand.—p. 225.
Treatment of Barbiturate Poisoning. C. C. Rhead Jr.—p. 228.
Psychoanalysis Today. R. P. Wang.—p. 231.
Bacteroides Bacterial Endocarditis: Cure by Massive Doses of Penicillin. R. M. deHay, J. L. Bell and J. M. Beebe.—p. 235.
Glomus Tumor Occurring on Trunk. H. C. Gotshalk and R. C. Durant.—p. 238.
Carcinoma of Vulva. H. McL. Patterson.—p. 240.

Journal of Clin. Endocrinology, Springfield, Ill.

10:289-370 (March) 1950

"Steroid Diabetes" and Alkalosis Associated with Cushing's Syndrome: Report of Case, Isolation of 17-Hydroxycorticosterone (Compound F) from Urine, and Metabolic Studies. R. G. Sprague, A. B. Hayles, M. H. Power and others.—p. 289.
Urinary Excretion of Corticosteroids in Diabetic Acidosis. J. W. McArthur, R. G. Sprague and H. L. Mason.—p. 307.
Uric Acid and Glutathione Content of Blood in Diabetes Mellitus. R. Stock and J. D. Currence.—p. 313.
Serum Antidiuretic Substance and Urinary Corticosteroid in Humans. C. W. Lloyd and J. Lobotsky.—p. 318.
Pituitary Hypogonadism with Adrenal Androgen Deficiency: Effect of Chorionic Gonadotropin on 17-Ketosteroid Excretion. L. H. Kyle and T. F. O'Donovan.—p. 330.
Effect of Menarche on Hepatomegaly in Apubescent Girl with Syndrome Resembling Glycogen Disease. V. M. Esselborn, C. D. Davis and E. C. Hamblen.—p. 339.
Androgen Administration in Postmenopausal Woman. W. H. Masters and D. T. Magallon.—p. 348.

10:371-478 (April) 1950

Renal and Extrarenal Disposal of Chorionic Gonadotropin in Immediate Postpartum Period. C. E. Johnson, A. Albert and R. B. Wilson.—p. 371.
Fertility in Paraplegic Males: Preliminary Report of Endocrine Studies. E. Bors, E. T. Engle, R. C. Rosenquist and V. H. Holliger.—p. 381.
Hypokaliemic, Hypochloremic Alkalosis in Cushing's Syndrome: Observations on Effects of Treatment with Potassium Chloride and Testosterone. R. Teabeaut, F. L. Engel and H. Taylor.—p. 399.
Hyperadrenalcorticism in Case of Acromegaly with Insulin-Resistant Diabetes. W. H. Daughaday, W. E. Perry and C. M. MacBryde.—p. 410.
Improvement of Rat Ovary Hyperemia Test for Pregnancy, by Adding Pituitary Synergist. P. H. Fried and A. E. Rakoff.—p. 423.
Studies on Stability of Equine Gonadotropin in Crude and in Purified Form. H. H. Cole, H. Goss and J. Boda.—p. 432.
New Simple Method for Accurate Measurement of Urinary I^{131} After Tracer and Therapeutic Dose. A. S. Freedberg, A. L. Ureles, M. VanDilla and M. J. McManus.—p. 437.
Treatment of Estrogen Deficiency with Estradiol Pellets. W. H. Perloff.—p. 447.

Journal of Experimental Medicine, New York

91:341-448 (April) 1950

Improved Methods for Preparation of Specific Polysaccharides of Pneumococcus. M. Heidelberger, C. M. MacLeod, H. Markowitz and A. S. Roe.—p. 341.
Abnormal Course of Bacterial Protein Synthesis in Presence of Penicillin. R. D. Hotchkiss.—p. 351.
Factors in Plasma Concerned in Natural Resistance to Avian Malaria Parasite (Plasmodium Lophurae). W. Trager and R. B. McGhee.—p. 365.
Effect of Tubercle Bacilli on Polymorphonuclear Leucocytes of Normal Animals. S. P. Martin, C. H. Pierce, G. Middlebrook and R. J. Dubos.—p. 381.
Studies of Hemolysis of Red Blood Cells by Mumps Virus. L.-W. Chu and H. R. Morgan.—p. 393.
Studies on Entry and Egress of Poliomyelitic Infection: I. Neutrotropic Infection of Peripheral Ganglia in Apparently Healthy Monkeys Following Casual Exposure. H. K. Faber, R. J. Silverberg and L. Dong.—p. 417.
Reciprocal Changes in Plasma Protein and Plasma Acacia as Result of High and Low Protein Diets. R. E. Knutti, J. B. Goetsch and R. A. Warrick.—p. 425.
Immunochemical Studies on Blood Groups: XI. Species Differences Among Blood Group A Substances. E. A. Kabat, H. Baer, R. L. Day and V. Knaub.—p. 433.

J. Venereal Disease Information, Washington, D. C.

31:95-124 (April) 1950

*Procaine Penicillin G in Treatment of Gonorrhea. R. B. Hogan, E. B. Johnwick, L. J. Hanchett and others.—p. 96.
Uniformity of Kahn Antigen: Mutually Established Criteria for Acceptable Antigen and Use of Reference Antigen by Michigan Department of Health Laboratories and Serology Laboratory of the University of Michigan Hospital. P. L. Kendrick and R. L. Kahn.—p. 104.
Report on Venereal Disease Control Cost Analysis, Fiscal Year 1948. A. B. Clark and B. E. Carroll.—p. 108.

Procaine Penicillin G in Gonorrhea.—Hogan and his associates studied the effectiveness of small doses of procaine penicillin in gonorrhea. The therapy consisted of a single intramuscular injection of procaine penicillin G in oil containing 2 per cent of aluminum monostearate in dosages of 100, 200, 250, 300, 500 and 1,000 units of penicillin per kilogram of body weight. In 135 patients with acute uncomplicated gonorrhea the authors noted an occasional cure at 100 units, and an occasional failure at 1,000 units of penicillin per kilogram of body weight. Maximum therapeutic results may be expected from dosages in excess of 1,000 units of penicillin per kilogram of body weight. If administered without regard to body weight, maximum therapeutic results may be expected from dosages in excess of 100,000 units of procaine penicillin.

Minnesota Medicine, St. Paul

33:313-416 (April) 1950

Studies on Brucellosis in Minnesota. W. W. Spink.—p. 333.
Recent Aspects of Cardiac and Juxta-Cardiac Surgery. I. D. Baronofsky.—p. 339.
Banti's Disease: Report of 2 Cases Treated by Splenectomy and Later Gastrectomy. C. E. Rea, W. W. Amerongen and C. H. Manlove.—p. 347.
Psychiatry in Geriatrics. W. P. Gardner.—p. 353.
Parathion Poisoning. W. E. Park.—p. 360.
Intravenous Administration of Para-Aminosalicylic Acid for Streptomycin-Resistant Tuberculosis of Trachea: Report of Case. D. T. Carr, W. E. Seybold, H. W. Schmidt and A. G. Karlson.—p. 363.
Psychiatry in General Practice. S. G. Egge.—p. 365.
Treatment of Barbiturate Poisoning with Metrazol. J. S. Milton and J. L. Stennes.—p. 370.

New Orleans Medical and Surgical Journal

102:475-524 (April) 1950

Amebiasis, a Clinical Evaluation. D. C. Browne, G. McHardy and E. W. Edwards.—p. 475.
Heart Complications in Bacillary Dysentery. D. N. Silverman and B. O. Morrison.—p. 481.
Congenital Familial Hemolytic Jaundice. I. Cohn.—p. 484.
Tracheoesophageal Fistula with Report of Case Treated Successfully by Ligation and End-to-End Anastomosis. H. R. Kahle.—p. 487.
Luetic Amyotrophic Meningomyelitis: Case Report. H. T. Posey.—p. 492.
Burn Involving Eighty Per Cent of Body with Survival: Report of Case. W. L. Rosen.—p. 496.
Sulfadiazine Anuria, Lower Nephron Nephrosis: Treatment with Intravenous Procaine. A. R. Brin and S. Mintz.—p. 499.
Fractures of Upper End to Femur: Analysis of 1,000 Cases. I. W. Kaplan and R. McDonald.—p. 500.
Beta Irradiation in Ophthalmology. G. M. Haik.—p. 504.

New York State Journal of Medicine, New York

50:1057-1168 (May 1) 1950

Diabetes Complicated by Pregnancy. B. A. Harris and R. A. Fisichella.—p. 1097.
Islet Cell Adenoma of Pancreas with Increased Insulin Excretion in Urine. V. Willner and V. A. Weinstein.—p. 1103.
Suggestions on Adult Circumcision. A. K. Swersie.—p. 1107.
*Study on Treatment of Common Cold with Antihistaminic Drug. C. R. Shaw and H. B. Wightman.—p. 1109.
Herpes Zoster Treated with Chloromycetin. B. D. St. John.—p. 1112.
Experimental Studies on Headache: Pain Originating in Nasal and Paranasal Structures. G. W. McAuliffe, G. C. Mueller and H. G. Wolff.—p. 1113.
Modified Nasal Diphtheria in Immunized Persons. W. Winkelstein Jr.—p. 1117.
*Poliomyelitis in New York City, 1949. M. Greenberg, M. Siegel and M. C. Magee.—p. 1119.

Antihistaminic Drug for Common Cold.—Shaw and Wightman treated in a university community 443 students with symptoms of a common cold which were present for not more than forty-eight hours. Two hundred and fifteen patients were given a placebo, and 228 were given tablets containing 50 mg. of 2-phenyl-benzylaminomethylimidazoline hydrochloride. Three hundred and four of the 443 took the tablets for three days, 114 took them for two days and 25 took them for only one day. Fifty per cent of those receiving placebos and 53 per cent of those receiving the antihistamine drug thought their symptoms had been helped by the medication. Sore throat, running or congested nose and malaise were aided equally by the placebo and the antihistaminic drug. Cough was benefited more by the drug. Patients with a history of allergy appeared to receive somewhat more benefit from the drug than from the placebo. The beneficial effect of the antihistaminic drug in this study appeared questionable.

Poliomyelitis in New York City.—Greenberg and co-workers report an outbreak of poliomyelitis which occurred in New York City in 1949, with a total of 2,446 cases and 179 deaths. About 75 per cent of the cases were in children less than 15 years of age, and 58 per cent of the cases were in males. Eleven hundred and nine patients (45.3 per cent) showed a spinal type of paralysis and 392 (16.1 per cent) a bulbar or bulbospinal type. The distribution of cases varied in the five buroughs and in the different health districts. The secondary attack rate in homes where a case had occurred was 15 times

the attack rate for the city as a whole. Schools opened on schedule, and the ratio of cases in school children to total cases did not increase after the opening. Reports indicated that recent tonsillectomy appears to predispose to the development of poliomyelitis and especially to the bulbar type. Exercise during the onset of poliomyelitis adversely affects its course.

Occupational Therapy & Rehabilitation, Baltimore

29:73-146 (April) 1950

Idea of the Sheltered Workshop. T. Ferguson.—p. 73.
Psychological Implications of Tonic Neck Reflex in Rehabilitation of Hemiplegic. J. F. Garrett and L. J. Yamshon.—p. 83.
Psychological Aspects of Problems in Spinal Cord Injuries. A. D. Mueller and C. E. Thompson.—p. 86.

Psychosomatic Medicine, New York

12:71-140 (March-April) 1950. **Partial Index**

Adrenal Cortical Responsivity of Psychotic Patients in Relation to Electroshock Treatments. H. Hoaglund, E. Callaway, F. Elmadjian and G. Pincus.—p. 73.
Postconvulsive Psychopathologic States in Electric Convulsive Treatment. O. Diethelm and P. F. Regan.—p. 78.
Adrenocortical Response to Physiologic Stress in Schizophrenia. J. H. Friedlander, R. Perrault, W. J. Turner and S. P. Gottfried.—p. 86.
Physical Symptoms During Pleasurable Emotional States. I Stevenson. —p. 98.
Integration of Medical and Psychiatric Methods and Objectives on Medical Service. T. Lidz and S. Fleck.—p. 103.
Neurogenic Factors in Nasal Catarrh. E. P. Fowler Jr.—p. 108.
Note on Psychosomatic Correlations. W. T. Lhamon and L. J. Saul. —p. 113.
Psychosomatic Aspects of Low Back Pain: Review of Recent Articles. L. Paul.—p. 116.

Review of Gastroenterology, New York

17:227-306 (April) 1950

Bezoar: Report of 3 Cases. W. Eberhard and G. T. Pack.—p. 235.
Transpleural Bilateral Vagotomy with Resection of Tenth Nerves. W. R. Morrison and S. Mikal.—p. 244.
Present Status of Flexible Tube Esophagoscopy. E. Boros.—p. 248.
Inhibition of Activity of Trypsin by Adsorptive Agents. S. Alpert and G. J. Martin.—p. 251.
Corticodiencephalic Gastrointestinal Syndromes in Epileptics (Part 4). T. S. P. Fitch, A. W. Pigott and S. M. Weingrow.—p. 257.

South Carolina Medical Assn. Journal, Florence

46:105-144 (April) 1950

Radioisotopes in Medicine. R. B. Taft and R. M. McCord.—p. 105.
Thyroid Diseases. E. M. Chapman.—p. 107.
Liver Cirrhosis: Review. D. Symmers.—p. 115.
Cancer. R. W. Postlethwait.—p. 123.

46:145-176 (May) 1950

Ascariasis and Respiratory Tract (Tropical Eosinophilia). K. Juniper Jr. and M. W. Beach.—p. 145.
Cancer of Genito-Urinary System. L. G. Lewis.—p. 150.
*Trichobezoar: Case Report. W. J. Nelson and E. M. Colvin.—p. 153.
Fibrosarcoma of Kidney: Case Report. C. P. Armstrong.—p. 155.

Trichobezoar.—Nelson and Colvin report the case of a girl, aged 11, who was hospitalized with complaint of anorexia, dyspepsia, generalized abdominal pain and malaise of several months' duration. Palpation revealed a large, firm, freely movable mass in the upper and mid abdomen. X-ray examinations revealed a large quantity of what appeared to be food mixed with some gas in the usual position of the stomach. There was also a small quantity of gas scattered through several short segments of small intestine. The diagnosis was enlarged stomach containing a foreign material. Questioning of the parents revealed that over a number of months the child had eaten twine, the sleeves of her sweaters, bits of her own hair, goat hair and other similar material. On opening the abdomen it was found that the stomach was dilated to approximately twice its normal size. The stomach was opened in the midportion of the anterior surface and a foul smelling, black, hairy mass was seen, which formed a complete cast of that organ and extended into the duodenum and jejunum for a considerable distance. The mass was removed intact by delivering the inferior portion first and then sliding the larger superior part out. The extension was teased out intact by gentle traction and manipulation of the bowel. The postoperative course was satisfactory, and the patient was discharged in excellent condition. The bezoar measured 26 cm. in its longest axis and 12 cm. in its greatest diameter. Attached to the lower end was an extension measuring 62 cm. in length. The authors believe this to be the largest bezoar on record.

Virginia Medical Monthly, Richmond

77:155-210 (April) 1950

Functioning Cancer. A. C. Broders.—p. 156.
Coexistence of Cancer and Tuberculosis of Larynx—Case History. G. N. Thrift and R. A Bagby.—p. 166.
Punch Liver Biopsy. H. C. Meredith Jr. and M. H. Hicks.—p. 170.
*Successful Femoral Artery Embolectomy Seventeen Days After Acute Coronary Occlusion. P. J. Nutter, W. W. Butzner Jr. and C. B. Cook.—p. 175.
Keratosis Follicularis or Darier's Disease: Report of Family. G. W. Hambrick Jr. and C. L. Leedham.—p. 178.
Sickle Cell Anemia and Pregnancy. G. Speck, C. W. Stevens and P. E. Halter.—p. 183.

Embolectomy of Femoral Artery After Coronary Occlusion.—Nutter and his associates report that a man aged 63 experienced an acute coronary occlusion in December 1947. He seemed to respond well to treatment with dicumarol,® but seventeen days after admission he complained of severe pain in the right leg, which was found to be pulseless, cool and mottled from the midthigh to the toes. A femoral embolus at the bifurcation of the profunda was suspected. The man was given 10 mg. of heparin in 500 cc. saline solution and 200 mg. of dicumarol.® Four hours after onset of the complication he was taken to the operating room. A longitudinal incision was made in Scarpa's triangle with the patient under local anesthesia, and the origin of the profunda femoris artery was exposed. A slight firm bulge with pulsation above was noted in the artery. Distal to the thrombus the artery was spastic and pulseless. Rubber bands were placed above and below the site of embolism and traction applied to control bleeding. A longitudinal incision about 1.5 cm. long was made in the artery over the lower site of the embolus. The embolus, in state of gray hepatization, was extruded by gentle pressure aided with forceps. Pressure on the artery above the incision was momentarily released, allowing the blood to spurt to wash out particles of clot. The artery was then closed with a single row of interrupted fine oiled silk sutures. Fifteen months after this embolectomy the man is leading an active life as a salesman.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

58:137-204 (April) 1950

Indications for Vagotomy in Treatment of Duodenal and Stomal Ulcer. H. R. Robertson and W. H. Sutherland.—p. 137.
Combined Jaw Resection and Neck Dissection for Treatment of Carcinoma of Mouth with Invasion of Mandible. L. T. Palumbo.—p. 140.
Acute Appendicitis in Pregnancy. E. S. Hoffman and M. Suzuki.—p. 147.
Proctorrhaphy: Surgical Working Plan that Applies Cardinal Principles of Surgery in Adapting Technic to Anatomy for Treatment of Hemorrhoids, Fistulas, Fissure, Abscess and Other Infections of Anal Canal. C. Eaton.—p. 159.
Effect of Pituitrin, Pitocin and Pitressin on Activity of Human Uterus. T. Dahle.—p. 168.
*Genital, Extragenital and Skeletal Granuloma Inguinale: Report of Case. R. G. Lipp and D. E. Bibby.—p. 173.
Surgery of Pancreas. H. S. Chapman.—p. 178.
Rupture of Uterus Before Onset of Labor. C. V. Von Der Ahe.—p. 188.
Gas Cysts of Intestines (Cystic Pneumatosis). S. O. Freedlander and S. S. Teitelbaum.—p. 192.
Study of Simple Contraceptive Method for Clinic and Private Patients. W. F. B. James.—p. 197.

Genital and Skeletal Granuloma Inguinale.—Lipp and Bibby report that a Negro woman aged 20 had osteomyelitis of the tibia and of both radii together with genital and soft tissue lesions characteristic of granuloma inguinale. Donovan bodies were isolated from tibial, inguinal and labial lesions. Aspiration of soft tissue swellings over radial lesions were unsatisfactory. A large rectovaginal fistula developed after 25 Gm. of streptomycin had been administered. The fistula later healed spontaneously, six weeks after discontinuation of streptomycin. Bed rest and streptomycin were the only treatments given over two periods of six and five weeks. A total of 63 Gm. of the antibiotic was given without toxic effects. This was replaced in later stages with the topical application of silver nitrate and supportive nutritional measures. Surgical treatment was not employed, although there were definite areas of osteomyelitis. This case suggests that streptomycin alone and possibly newer antibiotics will give good results in granuloma inguinale.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted.
Single case reports and trials of new drugs are usually omitted.

Annals of Eugenics, London

15:95-188 (March) 1950. **Partial Index**

*Familial Distribution of Diabetes Mellitus: Study of Relatives of 1,241 Diabetic Propositi. H. Harris.—p. 95.
Analysis of Blood Types and Clinical Condition of 2,000 Consecutive Mothers and Their Infants. K. E. Boorman.—p. 120.
*Hereditary Factors in Peptic Ulcer. R. Doll and J. Buch.—p. 135.
Recognition of Rare RH Type RY in Three Generations. A. Johnstone. —p. 159.
Family Size in Some Hereditary Disorders. S. M. de Delbue.—p. 184.

Familial Distribution of Diabetes Mellitus.—Harris found in a study of 1,241 diabetic patients that 4.34 per cent of the sibs of these patients were also diabetic. The sibs of the patients in whom the disease commenced in early life are more likely to develop the disease in early life than are the sibs of the propositi in whom the disease developed in later life. About 7 per cent of the sibs of propositi with age at the onset below 30 years may be expected to develop the disorder by the age of 40, while only about 1.3 per cent of the sibs of propositi who developed the disease after 30 years may be expected to develop it by the age of 40. Five and three hundreds per cent of the parents of the propositi had diabetes. There appeared to be little or no parent-child correlation with respect to age at onset of the disease. Less than 1 per cent of the children of the propositi were found to be diabetic. It was estimated that about 1.4 per cent of children of a diabetic parent may be expected to develop the disease by the age of 40.

Hereditary Factors in Peptic Ulcer.—Doll and Buch compared the incidence of peptic ulcer in the living sibs and parents of 300 ulcer patients with the incidence of peptic ulcer in a control population. They observed an excess of ulcer in the brothers, sisters and fathers of the propositi. The authors conclude that hereditary factors are of importance in the development of peptic ulcer. Evidence was obtained that familial tendencies were more prominent in duodenal ulcer patients and in those with early onset, but the differences were not statistically significant. A strong tendency was observed for sibs to have ulcers in the same site, irrespective of whether the site was duodenal or gastric.

Archives of Disease in Childhood, London

25:1-100 (March) 1950

*Local Paralysis in Children After Injections. J. K. Martin.—p. 1.
*Muscle Spasm in Poliomyelitis: Study of New Zealand Epidemic. J. E. Caughey and D. S. Malcolm.—p. 15.
Survey of Recent Developments in Treatment of Pneumococcal Meningitis. W. P. U. Jackson.—p. 22.
Protein Requirements of Infants: 3. Nutrition of Premature Infants. W. F. Young, P. Payner-Wall, H. C. Humphreys and others.—p. 31.
Neuro-Muscular Incoordination at Cardia in Newborn. J. Thomson. —p. 52.
Haemolytic Disease of Newborn: Part I: Clinical-Pathological Study of 157 Cases. A. Claireaux.—p. 61.
Hypertension of Renal Origin in Childhood. A. L. Griffiths.—p. 81.
Epulis in the Newborn. F. A. Langley and J. Davson.—p. 89.
Letterer-Siwe Disease. A. A. MacKelvie and W. W. Park.—p. 93.

Local Paralysis in Children After Injections.—Martin presents observations on 17 children in whom paralysis of a limb occurred after an injection had been given. All children were under 3 years of age, the average being 1 year. In a group of 39 similar cases that occurred between 1941 and 1949, the average age was 4½ years, the higher age being accounted for by the fact that children of school age represented the largest numbers of those inoculated in the early days of the immunization campaign. The average time between the injection and the onset of the paralysis was sixteen days, the majority of cases occurring between seven and twenty-one days. Constitutional disturbances occurred either before or at the onset of the paralysis. Nine patients had a history of fretfulness, lethargy, loss of appetite or pyrexia within one to four days of becoming paralyzed. In the remaining 8 patients an upper respiratory infection, pyrexia or fretfulness occurred at some time after inoculation. Neck rigidity was found in 4 patients who were seen at the time of onset. The onset was sudden, as a rule with a flaccid paralysis of the whole limb but frequently sparing the fingers and toes. The frequency with which an upper limb was affected, and in particular the left, would appear to reflect the commonest site for inoculation, namely, the left deltoid muscle. The prognosis is difficult to assess in the early stages, and recovery may begin nine to twelve months after onset, continuing up to two years or possibly longer. Treatment consisted in splinting of the paralyzed muscles. The author considers the possibility of toxins or virus contaminants contained in the material injected, allergic sensitization, reactivation of a latent virus brachial neuritis and particularly a connection with anterior poliomyelitis. The facts pointing to poliomyelitis are the constitutional symptoms, the changes in the cerebrospinal fluid and the seasonal incidence. The problem of the trauma of an injection determining the site of maximum paralysis is discussed. Suspension of immunization during an outbreak of poliomyelitis is probably desirable.

Muscle Spasm in Poliomyelitis.—Caughey and Malcolm record a clinical and experimental study of muscle changes that occurred in a recent epidemic of poliomyelitis in New Zealand. The term muscle spasm has come into use to describe those changes which occur in the acute stages of poliomyelitis and has to be distinguished from the contracture which is a terminal condition of muscle shortening due to fibrosis. The subject of muscle spasm has been controversial. Skilled observers encounter muscle spasm in all patients with poliomyelitis, whereas neurologists and orthopedic surgeons state that they have never encountered it in this disease, although all agree that spasm occurs in the muscles of the neck and back and in the hamstring muscles. The authors say that muscle spasm occurs in the acute stage of poliomyelitis. Muscles which are in spasm are contracted and usually tender on palpation. In their first 124 patients the authors gave attention chiefly to the extensor muscles of the neck and spine and the hamstring muscles. Evidence of spasm was detected in 89 per cent of these muscle groups. Thereafter it was realized that big muscle groups should be taken through their full range of movement in order to observe the effect of stretch. The examination of 40 consecutive patients carried out in this manner revealed evidence of muscle spasm in 100 per cent. During the acute stage patients used a firm mattress which gave splintage to the back muscles, and their feet rested against a foot board. The legs were prevented from rotating by sandbags, and the weight of the bedclothes was taken by a cradle. The relief of muscle spasm was accomplished by hot packs with woolen material, which was dipped in boiling water, wrung dry in an extractor and applied at intervals of one to four hours during the day and at night if required. Resolution of the muscle spasm sometimes occurred within a few days; at other times it was delayed for many weeks. In some the muscle spasm passed into a flaccid paralysis of contracture. Electromyographic studies failed to demonstrate electrical potentials in muscles in a state of spasm. Spinal anesthesia relieved spasm in the acute stage of the illness but not in the chronic stage. Curare failed to relieve spasm in the acute stage. The authors believe that muscle spasm in the acute phase of poliomyelitis is the result of reflex spasm due in part to inflammatory changes irritating the pain-sensitive structures of the meninges and dorsal roots, and in part to a local lesion in the muscles themselves.

British Journal of Radiology, London

23:207-260 (April) 1950

Radiological Assessment of Normal Aqueduct and 4th Ventricle. D. Sutton.—p. 208.
Diagnosis of Hydrops Foetalis. J. L. Boldero and F. H. Kemp.—p. 219.
Pre-Natal Radiological Diagnosis of Hydrops Foetalis. E. Samuel and J. Cohen.—p. 225.
Approach to Problem of Scattering of High Voltage Radiation in Non-Homogeneous and Limited Media. L. F. Lamerton and M. Winsborough.—p. 236.
Measurements of Gamma-Ray Doses Received by Radiotherapist During Radium Operations. J. L. Howarth, H. Miller and J. Walter.—p. 245.

British Medical Journal, London

1:799-854 (April 8) 1950

Controlled Investigation into Aetiology and Clinical Features of Rheumatoid Arthritis. Report of Scientific Advisory Committee of Empire Rheumatism Council.—p. 799.
Present Status of Adenine Nucleotides in Bodily Response to Injury. H. N. Green and H. B. Stoner.—p. 805.
Surgical Treatment of Spontaneous Subarachnoid Haemorrhage: Preliminary Report. M. A. Falconer.—p. 809.
Present Status of Rh-Hr Blood Types. A. S. Wiener.—p. 813.
Foetal Loss in Breech Presentation: Primigravidae and Multigravidae Compared. T. F. Redman.—p. 814.
Labial Diphtheria: Report on 46 Cases Among British Prisoners of War in Far East. G. S. Riddell.—p. 818.
Case of Uterus Didelphys with Unilateral Gynatresia. M. P. Embrey.—p. 820.

1:859-918 (April 15) 1950

Development and Behaviour of Children. N. B. Capon.—p. 859.
Vasodilators in Peripheral Vascular Disease. A. H. Douthwaite and T. R. L. Finnegan.—p. 869.
*Factors Associated with Perforation in Peptic Ulcer. C. Strang and I. O. B. Spencer.—p. 873.
Dental Cavities in Golden Hamster. J. D. King.—p. 876.
Hypercalcaemia During Vitamin D Treatment of Rheumatoid Arthritis. H. St.C. C. Addis and R. D. Currie.—p. 877.
*Poliomyelitis in Cornwall in 1949. E. R. Hargreaves.—p. 879.

Factors Associated with Perforation in Peptic Ulcer.—Strang and Spencer studied the factors associated with the development of perforation of a peptic ulcer and in particular the possibility of predicting the imminence of this complication. The material consists of 189 cases of perforated peptic ulcer admitted to the Royal Victoria Infirmary, Newcastle-upon-Tyne, during the one-year period February 1, 1948, to January 31, 1949. The diagnosis was confirmed in every case since all, except two who came to necropsy, were treated surgically. The great preponderance of males and the high incidence of duodenal ulcers were confirmed. In men, perforated duodenal ulcer was four times as common as perforated gastric ulcer. In women, perforated gastric ulcer was twice as common as perforated duodenal ulcer. In 91 per cent of patients a history of previous indigestion was obtained; in 64 per cent this conformed to a typical ulcer pattern. In 68 per cent the history of indigestion lasted for longer than one year. The onset of perforation seemed to be unrelated to individual habits of eating, drinking, and smoking, or to a particular phase of digestion. The moment of perforation was not correlated with the position of the patient, straining, or physical activity. Perforation occurred less often in the autumn than in the other seasons. The daily incidence varied little, but perforation was more frequent from midday to midnight than in the morning hours. In the three days preceding perforation 22 per cent of the patients had constant abdominal pain, 37 per cent intermittent pain, 28 per cent no pain, and 13 per cent vague symptoms such as heartburn and nausea. There was no specific pattern of symptoms.

Poliomyelitis.—Hargreaves reports on 110 cases of poliomyelitis which occurred in Cornwall in 1949. This represents an incidence of 0.3 per 1,000 of population. The areas most heavily attacked were those which escaped the disease in 1947. Individual cases of interest are those of 2 expectant mothers who developed poliomyelitis at or about the date of their confinement. In the one, severe paralysis developed four days before delivery, labor was normal, and the baby was unaffected. In the other, paralysis was first noticed 28 days after confinement. The baby, who was breast-fed, had symptoms suggestive of pre-paralytic poliomyelitis three weeks after birth, followed four days later by convulsions. At the present the infant has a slight residual weakness of the muscles of the left shoulder girdle. An exceptionally severe outbreak occurred in a city with a population of 12,950. The high age of these patients, their sporadic distribution in the city, the lack of history of contact between cases, together with the sudden cessation of the outbreak after superchlorination of the water supply, known to be contaminated, suggest water dissemination of the virus. The author presents evidence in favor of intestinal spread of poliomyelitis.

Irish Journal of Medical Science, Dublin

292:161-208 (April) 1950. **Partial Index**

Problem of Endemic Goitre in Ireland. D. K. O'Donovan.—p. 161.
Infective Hepatitis in Rural Area. M. Naughten, J. J. Russell and P. N. Meenan.—p. 184.
Present and Future of Anaesthesia and Anaesthetist. V. O. McCormick.—p. 193.

Journal of Clinical Pathology, London

3:1-86 (Feb.) 1950. **Partial Index**

Red Bone Marrow in Heart Failure. J. P. Shillingford.—p. 24.
Diagnosis of Neoplastic Cells in Sputum by Two New Methods. J. Perrin and G. T. Littlejohn.—p. 40.
Improved Photometric Methods for Use in Wassermann Reaction. D. Whillans.—p. 56.
Centrifugal Filter for Sterilizing Small Amounts of Fluid. G. R. F. Hilson and S. D. Elek.—p. 67.
Daily Excretion of Riboflavin, Biotin, Pantothenic Acid and Nicotinic Acid Derivatives by Normals. J. Fitzpatrick and S. L. Tompsett.—p. 69.

Journal of Laryngology and Otology, London

64:167-218 (April) 1950. **Partial Index**

Tuberculous Laryngitis Treated by Streptomycin. W. McKenzie.—p. 167.
Decibel, Phon and Sone. Consideration of Certain Physical, Physiological, and Psychological Aspects of Loudness with Special Reference to Pathogenesis of Recruitment Together with Account of Certain Allied Phenomena of Potentially Diagnostic Significance. A. Tumarkin.—p. 178.

Journal of Tropical Medicine and Hygiene, London

53:47-70 (March) 1950

*Sickle-Cell Disease in Africa and America—Comparison. A. B. Raper.—p. 49.
Conjunctival Ecchymosis as Complication of Malaria in British Troops Stationed in Bombay. D. S. Short.—p. 54.
Mobile Medical Unit in Colonial Work. S. A. Jones.—p. 58.

Sickle Cell Disease in Africa and America.—Raper shows that sicklemia is nearly three times as common in Central and West Africans as in American Negroes. Sickle cell anemia, however, is much commoner in the American than in the African Negro; it is rare in Africa, and it is possible that other morbid features of sicklemia are also less common in Africa. In seeking an explanation for the different incidence of the trait in the two major divisions of the black race, it may be assumed that the forebears of each group were indistinguishable in this respect two or three centuries ago and that the less stable community, the American, has suffered the change. The lower incidence in the New World may have resulted from intermarriage with non-Negroes, or, if we allow that fatal complications are for some reason commoner in America, it may be due to a higher mortality among families with sicklemia in America. It is still undecided whether sickle cell anemia occurs only in persons who are homozygous for the trait. The genetics of this disease require further study.

Lancet, London

1:651-696 (April 8) 1950

*Sympathectomy in Hypertension. R. Platt and S. W. Stanbury.—p. 651.
Relation of Prophylactic Inoculations to Onset of Poliomyelitis. B. P. McCloskey.—p. 659.
Ulcerative Colitis: Course and Prognosis. J. M. Rice-Oxley and S. Truelove—p. 663.
Congenital Oesophageal Atresia with Tracheo-Oesophageal Fistula: Report of 5 Cases and Plea for Early Diagnosis. B. Donnelly.—p. 666.
Carbon Dioxide Levels in Babies' Oxygen Boxes. A. Mackenzie.—p. 669.
Leakage of Air from Pneumoperitoneum into Pleural Cavity. E. W. Street.—p. 669.

Sympathectomy in Hypertension.—Platt and Stanbury discuss the results they obtained with sympathectomy in 80 cases of hypertension. Only patients in whom the prognosis was judged to be unfavorable—usually with resting diastolic

blood pressures of 120 mm. of mercury—or more were subjected to operation. In only 11 of 80 cases was a significant and lasting reduction of blood pressure achieved. Most patients were young women, under 40 years of age, who had either essential hypertension or renal hypertension with good renal function. It may be that the better results in these younger patients are related to the probable shorter duration of established hypertension and thus to the shorter time during which the hypertension itself could have produced irreversible vascular changes. Headache and retinopathy are sometimes relieved by a sympathectomy which has failed to reduce blood pressure. The authors are of the opinion that many, if not most, of the good results reported by other authors are due to three factors: (1) insufficient control, with failure to observe the blood pressure for a long enough time before operation is performed; (2) failure to appreciate the great variability of blood pressure in benign hypertension, and (3) ignorance of the natural history of benign essential hypertension, with lack of appreciation of its relatively good prognosis in most of the milder cases. The authors believe that on the whole hypertension is either too mild to warrant the use of this serious operation or the hypertension is too severe and the patient too old or arteriosclerotic to benefit from it. Despite this general condemnation, there is a small group in which sympathectomy produces apparently lasting and significant benefit.

1:697-744 (April 15) 1950

Pregnancy and Pulmonary Tuberculosis. H. M. Turner.—p. 697.
Penicillin in Treatment of Uncomplicated Gonorrhoea. A. J. King, F. R. Curtis and C. S. Nicol.—p. 701.
*Steroid Therapy in Rheumatoid Arthritis. G. D. Kersley, L. Mandel and M. R. Jeffrey.—p. 703.
*Treatment of Rheumatoid Arthritis with Deoxycortone and Vitamin C. J. P. Currie and G. Will.—p. 708.
Typhoid Fever Treated with Chloramphenicol: Review of 16 Cases. W. Edge.—p. 710.
Chilblains and Prothrombin Levels. D. Wheatley.—p. 712.
Hepatic Abscess Associated with Visceral Schistosomiasis. J. G. Graham and J. L. Orr.—p. 714.

Steroid Therapy in Rheumatoid Arthritis.—Kersley and his associates treated comparable groups of cases of active rheumatoid arthritis with methyl testosterone, testosterone propionate, ethinyl estradiol, progesterone, and chorionic gonadotropin. Of 44 patients given the steroid therapy alone, 9 taking ethinyl estradiol, only 6 completed the course; and of these 3 showed definite, and 2 slight improvement. The 3 who stopped treatment because of menorrhagia were worse as regards their arthritis. Of the 12 taking methyl testosterone, 3 showed improvement in the joint condition. Of 7 taking testosterone propionate, 3 showed moderate improvement in their arthritis, and 1 was slightly improved. Of the 7 patients taking progesterone, 4 said their joints were slightly easier. Pregnyl produced improvement in only 1 of 9 cases. About two-thirds of all the patients felt better. Allowing for the vagaries of the disease and the benefit usually derived from rest, encouragement, and physical treatment in hospital, the authors are doubtful whether these steroids played any significant part in the therapeutic results. Twenty-one patients were treated with steroids plus ascorbic acid. The steroid was given by injection one day, followed by steroid and ascorbic acid together on the two succeeding days, the ascorbic acid being given immediately after the steroid. Ethinyl estradiol and methyl testosterone were taken by mouth for at least a week before as well as during the ascorbic-acid administration. For comparison, 20 cases were treated with deoxycortone acetate and ascorbic acid on two successive days. Deoxycortone acetate 5 mg. was injected intramuscularly into the lateral aspect of the thigh and ascorbic acid (1 Gm.) was injected intravenously immediately afterwards. In only 4 of 42 cases was any pronounced improvement maintained for more than forty-eight hours. The promiscuous use of deoxycortone acetate and ascorbic acid as a method of treatment is to be deprecated at present.

Deoxycortone and Vitamin C in Rheumatoid Arthritis.—Currie and Will describe experiments with deoxycortone and vitamin C in rheumatoid arthritis, which were begun immediately after the publication of Lewin and Wassén's report of the favorable effects of such treatment. The 17 patients they treated were selected as fulfilling the clinical criteria of rheumatoid arthritis. The patients volunteered to come to the hospital so that they could be kept under proper surveillance. Deoxycortone in an oily solution was injected intramuscularly, followed within 10 minutes by an intravenous injection of an aqueous solution of vitamin C. The doses were: deoxycortone 5 mg., and vitamin C 1 Gm. None of the patients experienced an increase in range of movement. Two patients who reported subjective improvement were subsequently given physiologic solution of sodium chloride without their knowing of this substitution and the results were the same. The authors were not convinced that deoxycortone and vitamin C in the recommended doses are of any value in the treatment of rheumatoid arthritis.

Medical Journal of Australia, Sydney

1:213-252 (Feb. 18) 1950

Arachnodactyly or Marfan's Syndrome. C. G. Lambie, K. E. Shellshear and J. L. Shellshear.—p. 213.
Fibrosis Uteri and Its Diagnosis by Means of Uterine Scrapings. W. L. Nickson and J. R. S. Douglas.—p. 223.
The Psychoneurotic in Industry. W. S. Dawson.—p. 225.
Psychoneurosis in Industry. L. S. Wallman.—p. 228.

Practitioner, London

164:289-380 (April) 1950. Partial Index

Tennis Elbow. W. Mercer.—p. 293.
Injuries to Professional Association Footballer. W. G. S. Pepper, A. T. Fripp and W. E. Tanner.—p. 298.
Prevention of Athletic Injuries in Children and Adolescents. A. Thorndike.—p. 306.
Sprains and Dislocations. J. Charnley.—p. 314.
Broken Collar Bone. L. Morris.—p. 320.
Athletics and the Heart. T. East.—p. 328.
Urge to Purge: Superstition and Principle in Surgery. V. J. Kinsella.—p. 333.

Transactions Royal Soc. Trop. Med. and Hyg., London

43:445-554 (March) 1950. Partial Index

Studies in Onchocerciasis (Review of 100 Cases from Enugu District of Eastern Nigeria). C. Nwokolo.—p. 493.
Mass Prophylaxis Against Sleeping Sickness in Sierra Leone: Final Report. R. D. Harding and M. P. Hutchinson.—p. 503.
*Toxic Action of Emetine on Cardiovascular System. A. D. Charters.—p. 513.
Trichosporosis (Piedra) in Malaya. R. Green and D. S. Mankikar.—p. 523.
Preliminary Trial of Paludrine Single-Dose Therapy in Colombia. H. Rey and J. de Zulueta.—p. 531.
Oscillometric Studies in Neural Leprosy. J. Barnetson.—p. 535.
Skin Temperature Studies in Neural Leprosy. J. Barnetson.—p. 539.

Toxic Effects of Emetine on the Cardiovascular System.—Charters made studies on 11 patients, 9 with amebiasis and 2 with schistosomiasis. Each patient was examined before and immediately after the completion of a course of twelve daily intramuscular injections of 1 grain (0.06 Gm.) of emetine hydrochloride solution. Nine patients were seen again after fourteen to forty-one days. There was an average fall in blood pressure of 8 mm. systolic and 4 mm. diastolic after the course. The exercise tolerance deteriorated in 7 of the 9 patients after the emetine injections but returned to the previous level in 5 of the 7 after a further average interval of thirty-two days. The average resting pulse rates before emetine therapy, immediately after the course and after the subsequent average interval of thirty-two days were 80, 86 and 80, respectively. The electrocardiogram showed deterioration after the injections in 6 cases. Four of the patients showed an improvement when reexamined after the interval. Three patients showed slight abnormality of the electrocardiogram before the onset of treatment, presumably as the result of toxic action of the disease. All these patients improved after the emetine, both clinically and electrocardiographically. Two instances of accidental emetine overdosages are described. The first patient had myocardial disease as evidenced by tachycardia, lowered blood pressure, poor exercise tolerance and low voltage electrocardiogram, all of which cleared up within thirteen weeks of the last injection. The second had diarrhea, which ceased after a week, and dermatitis, which disappeared within three weeks. No case of cardiac enlargement, irregularity of rhythm or interference with conduction followed intramuscular injections of emetine hydrochloride.

Acta Chirurgica Belgica, Brussels

49:1-156 (Jan.) 1950. **Partial Index**

*Pathogenic Interpretation of Recurrences of Regional Ileitis (Crohn's Disease). W. Smets and A. Danis.—p. 23.
Perforation of Lithiasic Gallbladder into Free Peritoneum; Choleperitoneum. M. Xhigne.—p. 47.
Clinical Bases for Management of Hematemesis: Indications for Immediate Gastrectomy. G. de Toeuf, V. Conard, I. Duwe and O. Demol. —p. 72.
Androgen Therapy in Metastasis of Cancer of Breast. C. Flamand. —p. 85.

Recurrence of Regional Ileitis.—Smets and Danis report 2 cases of regional ileitis in 2 men aged 35 and 36, in whom apparent recovery resulted from a two stage resection. The first patient had a terminal ileitis, the second a plurisegmental ileitis. Ileotransversostomy with exclusion was followed by extensive ileocolic resection within five weeks in the first case and within six months in the second case. These 2 cases were typical examples of Crohn's disease. Clinical history was confirmed by roentgenologic examination and intervention made it possible to observe the characteristic lesions of chronic stenosal regional enteritis. Microscopic examination revealed chronic unspecific inflammatory lesions. Within eleven and eight years respectively a second resection had to be performed for recurrences in both cases. Excision was less extensive at the first operations than that suggested as the lower limit by Bockus, but it was carried into normal tissue in both patients. The extent of the excision at the second stage corresponded with the upper limit suggested by Bockus in the first patient, and 10 cm. of healthy intestine were resected in the second patient. Roentgenologic examination revealed definite signs of a second recurrence within seven months after the second resection in the first patient, and a disturbance of passage was observed within fourteen months after the second resection in the second patient. Plasmocytic infiltration of the intestinal mucosa was revealed by microscopic examination of a fragment of the intestine of the first patient which was removed at the resection after the first recurrence, while the macroscopic aspect of the fragment appeared normal. There was no mesenteric involvement. These observations suggest that the disease originates at the level of the mucosa and that the lesions of arteritis, phlebitis and lymphangitis are secondary. The authors believe that the lesions first described by Crohn are not those of a chronic stenosal regional ileitis but should be considered as a stenosal regional complication of a chronic diffuse enteritis. Prolonged follow-up of patients after resection of the involved intestinal loop will show the high incidence of recurrences. Surgical intervention should therefore be limited to stenosis, abscess or fistula when such complications may threaten the life of the patient. Treatment should be conservative and symptomatic in all the other cases. It should restore the digestive equilibrium and combat infectious episodes.

Archivos de Pediatría del Uruguay, Montevideo

21:81-140 (Feb.) 1950. **Partial Index**

*Gaucher's Disease. M. L. Saldún de Rodríguez and A. Volpe.—p. 98.

Gaucher's Disease.—In the course of fourteen years, Saldún de Rodríguez and Volpe observed familial splenic anemia in 2 infants and 3 young children. Three patients were sisters. The other 3 children of the same family are normal, at the ages of 10, 8 and 6 years. The 3 sister patients were normal at birth. They had jaundice at the age of 2 months. The disease appeared in the third, sixth and twelfth months of life. The first and second infants had the acute and subacute neurologic type of the disease. They died at 17 months and 5 years with signs of extreme cachexia and acute neurologic changes. The disease is chronic and without neurologic symptoms in the third patient. The disease is due to a constitutional disorder of the metabolism of cerebrosides. The younger the infant at the beginning of the disease the more acute its course leading to terminal neurologic syndrome. In children the disease may progress into the chronic type without neurologic symptoms. The differential diagnosis between familial splenic anemia and Niemann-Pick disease is made by chemical study of a biopsy of the bone marrow which shows intracellular lipoid kerasin in the former and sphingomyelin in the latter. No curative treatment is available.

Beiträge zur klinischen Chirurgie, Berlin

179:1-160 (No. 1) 1949. **Partial Index**

Clinical and Experimental Investigations on So-Called Osteitis Fibrosa Generalisata. H. Kastrup.—p. 1.
Change in Position and Form of Trachea in Goiter and Its Postoperative Return to Normal. H. Brückner.—p. 33.
Osteomyelitis of Calcaneum Caused by Wire Traction. T. Becker.—p. 45.
*Dupuytren's Contracture. E. Bode.—p. 53.
Forms of Peritonitis in Intestinal Gangrene. W. von Romatowski.—p. 65.
*Experiences with Hepatocholangiogastrostomy. E. Seifert.—p. 123.
Clinical Aspects and Bacteriology of Chronic Lung Abscess with Pyopneumothorax. C. Dolff and H. Lodenkämper.—p. 135.
Retotheliosarcoma of Stomach. H. Becher.—p. 141.

Dupuytren's Contracture.—Bode discusses the clinical picture and the pathogenesis of Dupuytren's contracture and evaluates the surgical methods employed. Of 35 patients who underwent operation at the Surgical Clinic of the University of Göttingen between 1912 and 1944, 27 were over 40 years of age and all but 1 were men. The process was bilateral in 18. The contracture involves the fourth and fifth fingers in the great majority of cases, the other fingers seldom being involved. The incidence of the contracture is higher in persons doing hard physical labor than in those whose hands are not exposed to the same extent. Heredity could be demonstrated in 5 of the cases, and in 7 injury was regarded as the cause. No other pathogenetic explanation could be given. Operation according to Kocher's principle was employed in 32 of the patients. The involved skin was always removed. The resulting cutaneous defect was sometimes so large that plastic repair with skin from the abdomen became necessary. The results of surgical treatment were satisfactory, renewed contracture of the fingers occurring in only a few of the cases.

Experience with Hepatocholangiogastrostomy.—Seifert is of the opinion that hepatocholangiogastrostomy, the establishment of a direct connection between intrahepatic bile ducts and the stomach, is too often regarded as merely a makeshift and a half measure. The operation is indicated in cases in which the bile flow is obstructed by a tumor or by cicatrization and in which the topographic conditions do not permit any of the plastic procedures. He describes the result of 12 operations in 11 patients. Seven of these patients died, but in only 1 of them could the fatality be attributed to the surgical intervention. Four patients could be discharged as cured, and their bile flow was quite satisfactory. One cannot rule out the possibility of the future development of an ascending infection.

Helvetica Paediatrica Acta, Basel

4:445-548 (Dec.) 1949. **Partial Index**

Causes of So-Called "Habitual" Vomiting of Nurslings. E. Roviralta. —p. 445.
Peptic Ulcer in Children. F. Karlström.—p. 455.
*Cholelithiasis in Children. J. Wellauer.—p. 462.
Pathogenesis and Therapy of Toxicoses, Especially in Nurslings. G. Fanconi.—p. 475.

Cholelithiasis in Childhood.—Wellauer reports a girl who at the age of 4 years began to have atacks of severe abdominal pain. Sensitivity to pressure in the right side of the abdomen suggested to the examining physician the possibility of appendicitis. The father of the child observed that the attacks followed ingestion of certain foods, particularly those with a relatively high fat content. Roentgenologic examination of the gallbladder disclosed stones. A cholecystectomy was performed, and the child recovered. The author was able to collect 245 additional cases of cholelithiasis in children. This material included 19 newborn infants, 24 children less than 1 year old, 14 between 1 and 5 years, 40 between 5 and 10 years, and 119 more than 10 years old. This coroborates the generally accepted opinion that the incidence of gallstones increases with age. The higher incidence of cholelithiasis in the female sex was observable even in children, there being 147 girls and 88 boys. A correct diagnosis was made in only 17 cases in which roentgenoscopy disclosed stones and in a few patients who had classic gallstone symptoms. In all other cases, and particularly in children who were less than 8 years of age, the gallstones were detected during operation (115 cases); in 14 others stones were passed and in 78 the concretions were detected at necropsy.

This last group included most of the infants. The possibility of cholelithiasis should be investigated in children with severe abdominal pains for which no other causes can be found.

Journal d'Urologie, Paris

55:745-840 (No. 10) 1949

Study of Sodium Thiosulfate Clearance in Human Beings with Low Blood Concentration. J. Lebrun.—p. 745.
*Rheumatic Glomerulonephritis and Renal Forms of Bouillaud's Disease. G. Mayer and A. Lévy.—p. 758.

Rheumatic Glomerulonephritis.—Mayer and Lévy report 4 cases of rheumatic glomerulonephritis in 3 men and 1 woman. The first 2 cases represent a pure renal type of rheumatic fever. There was persistent anemia, increased sedimentation rate, absence of any humoral upset of nephrotic type, sourish sweats and arthralgia. The second case demonstrated that rheumatic glomerulonephritis may run a subacute course with an unfavorable prognosis. Control of the renal type by the administration of sodium salicylate may be as difficult as that of the pure cardiac types. The third and the fourth case demonstrated the slow or the rapid transition of rheumatic glomerulonephritis into the state of chronicity. Specific treatment of rheumatic nephritis with sodium salicylate reduces but does not suppress the hazards of glomerulonephritis. The authors emphasize that acute rheumatic nephritis is not always benign and that it may become chronic. They stress the occurrence of pure renal types of rheumatic fever.

Minerva Medica, Turin

41:57-104 (Jan. 13) 1950. **Partial Index**

*Extensive Mass BCG Vaccination. G. Salvioli.—p. 69.
*Miliary Syphilis of Lung. E. Anglesio and B. Bellion.—p. 76.

Extensive Mass BCG Vaccination.—Salvioli discusses the preventive value of BCG vaccination and the advisability of extensive mass vaccination. He concludes that extensive mass BCG vaccination is in the experimental phase and that it may be dangerous for an antiallergic person. BCG vaccination should be given only to newborn infants and not to school children or adolescents.

Miliary Syphilis of Lung.—According to Anglesio and Bellion miliary syphilis of the lung is rare. The clinical symptoms and roentgen signs are the same as those of acute miliary tuberculosis. The diagnosis is made in the presence of a positive Wassermann reaction in adults of middle age, with tubercle bacilli absent in the sputum and with rapid control of clinical symptoms and disappearance of nodular pulmonary shadows in the roentgenogram on administration of antisyphilitic therapy.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

94:361-432 (Feb. 11) 1950. **Partial Index**

Responsibilities and Liabilities in Blood Transfusions. P. G. Hoorweg and J. Spaander.—p. 366.
*Culture of Brucella Abortus Organisms from Duodenal Fluid: Problem of Carrier State. C. D. de Langen.—p. 377.
Duration of Immunity Produced by Vaccination Against Smallpox. E. van der Werf.—p. 383.
Cytologic Morphology of Vaginal Smears in Cancer of Uterus. B. C. Hopman.—p. 386.

Culture of Brucella Abortus from Duodenal Fluid.—The fact that the liver is usually enlarged and involved in Brucella abortus infections, suggested to de Langen culturing the organisms of Brucella from aspirated duodenal contents. Positive results were obtained in cases in which the Brucella organisms could not be demonstrated by any other method. The author cites a case in which the organisms could be detected in the duodenal fluid five years after an attack of brucellosis, the patient having shown no signs of the disease for at least four years. The agglutination test with the standard laboratory strain, which had been positive five years before, was now negative. However, agglutination to the strain now cultured from the duodenum was positive. Brucella organisms were cultured from the duodenal fluid of a patient who had been free from symptoms for nine years following an attack of brucellosis. This patient reacted positively toward the standard strain of the laboratory. His reaction was stronger toward the newly isolated bacilli. The question arises whether patients who harbor Brucella organisms in the duodenal fluid might become carriers.

Nederl. Tijdschrift v. Verlosk. en Gynaec., Haarlem

50:1-98 (No. 1) 1950. **Partial Index**

Early Rising Following Gynecologic and Obstetric Operations. E. Tonkes.—p. 11.
*Prophylaxis of Hemolytic Disease of the Newborn by Means of Alpha Tocopherol (Vitamin E). B. S. ten Berge and F. J. J. van Assen.—p. 38.

Alpha Tocopherol (Vitamin E) in Hemolytic Disease of the Newborn.—Ten Berge and van Assen report 6 cases in which they administered alpha tocopherol acetate orally, usually beginning during the third month of pregnancy. A daily dose of 100 mg. was given. The effect of this treatment was especially evident in 2 of the women; one had had two previous hydropic stillbirths and the other four stillbirths with signs of icterus. Labor was induced in both women after treatment with vitamin E after the thirty-sixth week of gestation. The infants showed moderate degrees of hemolytic icterus and survived after replacement transfusion. The placentas of the treated patients were examined microscopically. Although the mode of action of vitamin E cannot be fully explained, the authors believe that the permeability of the placenta is reduced. The antibody titer remained low, or the antibodies disappeared entirely. Probably less antigens reach the mother and less antibodies are being formed because the placenta becomes less permeable.

Schweizerische medizinische Wochenschrift, Basel

80:193-216 (Feb. 25) 1950. **Partial Index**

*Results of Electron Therapy with Betatron Using 6 Million Volts. G. Schubert.—p. 193.
*Infiltration Anesthesia of Anterior Scalenus Muscle in Differential Diagnosis and Therapy of Scalenus Anticus Syndrome. P. Häberlin.—p. 200.
Problem of Prolonged Pregnancy. F. Ludwig.—p. 202.
Clinical Observations on Therapeutic Use of Heart Extract. R. Suriyong and A. Vannotti.—p. 208.

Electron Therapy of Carcinoma with Betatron of 6 Million Volts.—The betatron available to the author is for 6 million electron volts. It emits approximately 1,000 r per minute at a distance of 1 meter from the window. Schubert discusses the advantages of irradiation with rapid electrons and their biologic effects. The electrons emitted by his betatron have a penetrability of only 2 or 3 cm. They were used chiefly for skin and other superficial lesions. At the skin clinic in Göttingen more than 70 patients have so far been treated with rapid cathode rays. They included 43 with carcinoma (cornified pavement epithelial cancers and some of basal cell structure). Irradiation was applied at a distance of 50 cm. With a dosage capacity of 1,000 r per minute, 2,000 r were applied. These irradiations were given also to 5 patients with cutaneous relapses and metastases in the regional lymph nodes following breast amputation for carcinoma. Some of these patients were given only 1,000 r in 1 minute. An edematous-urticarial erythema developed immediately after the irradiation but subsided within several hours. Several days later an increasing erythema became visible, which developed ten to fourteen days later into an erosive reaction which persisted for six to eight weeks. During this period complete involution of the tumor took place. From six to ten weeks after the irradiation the carcinomas were replaced by a smooth scar. All symptoms subsided. The author ascribes this effect to the massive localization of the ray action within the tumor. The period since the irradiation is too short for the estimation of five year survival rates.

Infiltration Anesthesia of Muscle in Scalenus Anticus Syndrome.—According to Häberlin the scalenus syndrome is characterized by pain and paresthesias in the region of the arm and shoulder. The pain is influenced by the position of the arm. In severe cases arm and hand may show muscular atrophies. The author explains anatomic relationships in the triangular scalenus gap between the subclavian artery, the arm plexus, the first rib and the anterior and median scalenus muscles, which presumably play a part in the development of

the syndrome. Local anesthesia of the anterior scalenus has been suggested by several authors. Häberlin has used infiltration anesthesia in 20 cases of proved or suspected scalenus anticus syndrome. He used a 0.5 solution of panthesine® (a procaine derivative, N-diethyllencinol ester of paraaminobenzoic acid) to which epinephrine had been added. The injection is made with the patient lying down. The head is turned to the side that is not involved, and the usually tense and painful anterior scalenus muscle is palpated at the lower, lateral margin of the sternocleidomastoid muscle. A cutaneous wheal is produced over the muscle 2 fingerbreadths above the clavicle. The index and middle fingers, slightly spread apart, are placed on the anterior scalenus muscle and the injection needle is inserted between these two fingers. Correct position of the needle in the muscle is proved by the fact that it is no longer possible to move the skin above the muscle separately. The needle should not be completely pushed through the muscle. Four to 6 cc. of the anesthetic is injected. If the needle has been inserted too far a partial anesthesia of the plexus may result and diagnostic evaluation becomes impossible. In typical cases of scalenus syndrome, which could be verified later by successful surgical treatment, the pain subsided after the injection. Some patients are completely relieved, whereas in others the relief is only temporary. The method is of therapeutic and differential diagnostic value.

Ugeskrift for Laeger, Copenhagen

193:289-322 (March 2) 1950

*Conservative Treatment of Anuria in Lower Nephron Nephrosis. H. Baden and A. Harrestrup Andersen.—p. 289.
*Sulfonamide Hematuria: Frequency of Lesion of Urinary Tract Evaluated on Basis of 6,084 Treatments with Different Sulfonamide Preparations. N. I. Nissen, K. Aagaard and E. Flindt-Hansen.—p. 295.
*Sulfanilamide Anuria (Lower Nephron Nephrosis): 5 Cases After Treatment with Sulfathiazole and Lucosil at Home. V. Oram and H. Kopp.—p. 303.
Anuria Due to Single Subcutaneous Dose of Sulfathiazole. T. Secar-Jensen.—p. 307.

Conservative Treatment of Anuria in Lower Nephron Nephrosis.—Baden and Andersen stress the value of conservative treatment suggested by Bull and his associates. An emulsion of 400 Gm. dextrose, 100 Gm. peanut oil, acacia in sufficient quantity and water to make 1,000 Gm. is administered by constant intragastric drip. About 1,000 Gm. of the emulsion is given during the twenty-four hours, the amount depending on the fluid loss. The method gave good results in 4 cases of lower nephron nephrosis due to obstetric shock, sulfathiazole, acute gastroenteritis and sulfadiazine. In a fifth patient with acute cholecystitis death occurred within twenty-four hours after start of the treatment. The so-called hepatorenal syndrome is believed to be identical with lower nephron nephrosis in patients with disease of the liver or biliary passages.

Sulfonamide Hematuria.—Nissen and his associates evaluated the frequency of lesions of the urinary tract resulting from the administration of sulfonamide preparations on the basis of 6,084 treatments given to 4,751 patients. The first morning urine was subjected to chemical analysis. It was found that sulfonamide compounds which are quickly excreted, for example sulfamethylthiadiazole (lucosil,® or N,[5-methyl-1,3,4-thiadiazole-2-yl]sulfanilamide), have considerably less tendency to cause lesions of the urinary tract than do substances which are excreted slowly, as are the sulfapyrimidines—sulfadiazine and sulfamerazine. Spontaneous chemically demonstrable bleeding from the urinary tract is not infrequent during the course of a grave infectious disease and occurs more often in older than in younger patients; sulfonamide lesions also are more frequent in older patients. Sulfamethylthiadiazole given in 3,078 treatments was not less effective in pneumonia than the sulfapyrimidines in spite of the relatively lower blood concentration and more rapid elimination.

Sulfonamide Anuria (Lower Nephron Nephrosis).—Oram and Kopp review the treatment of sulfonamide anuria by intestinal dialysis, peritoneal irrigation and interruption of the sympathetic system. In the 5 cases described, with anuria after relatively small doses of sulfathiazole and sulfamethylthiadiazole (lucosil,® or N,[5-methyl-1,3,4-thiadiazole-2-yl]-sulfanilamide), and no known previous predisposing renal disorder, the anuria is ascribed to an allergic-toxic injury of the renal function due to sulfonamide. This was verified at necropsy in the 2 fatal cases, in one of which treatment with intestinal dialysis was attempted but instituted too late. The author cautions against uncritical use of sulfonamide drugs in relatively unimportant disorders.

112:387-424 (March 23) 1950

*Probable Bacterial-Allergic Asthma in Children and Its Treatment. E. W. Flensborg, G. Neerborg and T. Samsøe-Jensen.—p. 387.
*General Reactions Following Treatment of Asthma in Children with Bacterial Vaccines. E. W. Flensborg.—p. 392.
*Treatment of Chronic Polyarthritis with Danish ACTH Preparation. E. Vermehren and M. Vermehren.—p. 399.
*ACTH Treatment of Lupus Erythematous Disseminatus. M. Schwartz and L. M. Sonne.—p. 402.

Probable Bacterial-Allergic Asthma in Children and Its Treatment.—Flensborg and his co-workers state that there are many children, particularly in the first four years of life, with negative cutaneous reaction to the usual allergens, whose asthmatic symptoms follow infections in the upper respiratory tract. Clinically they are not to be distinguished from other children with asthma who have positive cutaneous reactions. Eosinophilia occurs equally often in the two groups and familial allergic disposition is about equally frequent. After attention is directed to a possible focus, the children are treated with bacterial vaccines. This treatment gives better results than specific desensibilization in children with positive cutaneous reactions. Treatment with autovaccine was abandoned because of the difficulty in obtaining pure cultures and variations in the nose-throat flora in the same patient. A special standard vaccine prepared by the State Serum Institute, "vaccine for treatment of asthma," is now being used. Since general reactions may be marked on even small doses of the vaccine, bacterial allergy is believed to be present. Treatment should be continued until there has been freedom from symptoms for one year.

General Reactions Following Treatment of Asthma in Children with Bacterial Vaccine.—General reactions, slight, moderate and severe, were observed in 42 of 162 children treated with common pathogenic bacteria from the upper respiratory tract. More severe types were proportionately more frequent on later vaccine reactions than on the first. Flensborg says that bacterial reactions are late reactions, usually occurring on the average after two days, and last for from six hours to six days. Repeated overdosage without reference to possible slight reactions may induce status asthmaticus or prolonged rise of temperature. A fatal case is reported, ascribed to a vaccine injection of only 2,600 bacteria in a 1 year old child who earlier showed only a slight reaction to the same dose. The best treatment is prophylactic application of a small dose and careful increase with close attention to even slight reactions, control to include taking the temperature during the first four days after the injection. Treatment of moderately severe and severe reactions is symptomatic. The authors advise that the special standardized vaccine be used with a more careful dosage than was formerly the case.

Treatment of Chronic Polyarthritis with Danish ACTH Preparation.—Vermehren and Vermehren describe 2 cases of chronic polyarthritis treated with a Danish pituitary adrenocorticotropic hormone (ACTH) preparation. Characteristic metabolic changes were observed in both of the patients. The arthritic symptoms almost disappeared during treatment in 1 of the patients, but in the other one there was no definite clinical improvement.

ACTH Treatment of Lupus Erythematosus Disseminatus.—Two patients with this disease were treated by Schwartz and Sonne with the ACTH preparation applied by Vermehren and Vermehren in treatment of chronic polyarthritis. In one case there was almost normalization, in the other the effect was uncertain. The treatment was begun on the same day in both cases and the same total dosage was given. The difference in results is ascribed to the difference in ability to react to the stimulization. In both instances there was a definite depression of the serum globulin fraction and the formolgel reaction became negative. In the third patient treated the clinical effect was excellent, with almost complete fading of the skin and disappearance of marked facial edema.

BOOK NOTICES

The reviews here published have been prepared by competent authorities and do not represent the opinions of any official bodies unless specifically stated.

Medical Management of Gastrointestinal Disorders. By Garnett Cheney, M.D., Clinical Professor of Medicine, Stanford University Medical School, San Francisco. Cloth. $6.75. Pp. 478, with 29 illustrations. The Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1950.

This is a manual written by an internist qualified to discuss the specialty of gastroenterology for the general practitioner. The object of the writer is to provide the physician in general practice with a ready and, on the whole, reliable guide for the diagnosis and treatment of his gastrointestinal cases. The references are entirely inadequate for anyone seeking detailed representative information about diseases of the digestive tract.

The subject matter covered is not complete and is arranged in a manner that makes it troublesome to secure the information desired about a given disease without reference to one or more different chapters. For instance, chapter 17 deals with the management of gall bladder and bile duct disease. Herein one is immediately told that the symptomatic diagnosis of disorders of the biliary tract has been discussed in chapters 8, 9, 13, 14 and 15! In chapter 12, "Management of the Peptic Ulcer Problem," one observes with disappointment under "Treatment of Complications" that hemorrhage is discussed in chapter 10. Such an arrangement of material leads to much repetition, confusion and difficult reading.

There are a number of serious omissions. The fact that coronary occlusion, for instance, may masquerade as acute indigestion is not mentioned in the discussion of acute indigestion. Also, to state that only four lesions cause discomfort and soreness localized in the upper middle abdominal region and that there are six general causes of severe abdominal pain that should always come to mind is an oversimplification of the facts. Incidentally, gallstone colic does not always cause "agony," and if one expects such one may overlook many cases of cholelithiasis. In the diagnosis of chronic diarrhea, the necessity for a roentgenographic examination of the lungs is not mentioned. In fact, the diagnosis and treatment of ulcerative tuberculosis of the intestines with special reference to streptomycin is entirely omitted. Regional enteritis is not discussed.

The treatment outlined for idiopathic ulcerative colitis is not in accord with current sound gastroenterologic practice. The author apparently depends almost entirely on two preparations which singly or in combination offer great promise, he believes, "in effecting a complete remission and possibly even a clinical cure" of the disease. The two preparations he refers to are viodenum® (desiccated, defatted duodenal substance) and azopyrin® (salicylazosulfapyridine). He has been fortunate, to say the least, in securing in 30 patients the results he reports from the use of viodenum.® With azopyrin,® he treated 19 patients. Sixteen, all of whom had failed to respond to all other forms of treatment, had complete remissions. Six of his patients had relapse after treatment was stopped. All responded, however, to a second course of therapy. No reference whatever is made to the place of surgery in the management of idiopathic ulcerative colitis. The author's experience with this disease is reminiscent of his experience in the treatment of peptic ulcer with cabbage juice.

Representative of a number of statements that could prove misleading to the inexperienced physician are these assertions: "Pruritus that develops with jaundice and after the onset of upper abdominal pain is significant because it occurs only with obstructive jaundice . . ."; "Definite flank and lumbar tenderness with severe right- or left-sided abdominal pain and colic are practically diagnostic of renal disease"; "If a patient has pain and tenderness in the right lower quadrant and acute appendicitis is suspected, leukocyte counts have immense diagnostic value. . . ." The suggestion that patients with acute appendicitis may not require immediate surgical intervention in view of the efficacy of sulfonamides and antibiotics is out of place in a manual of this sort.

Aside from a brief discussion of psychoanalytic interviews, which in itself is commendable, no attention is given diseases of the digestive tract from a psychosomatic point of view. The section on food allergy is confusing. The author states that dermal tests may have value and that testing by the "scratch method" is usually satisfactory. On the other hand, he lists, in the same chapter, scratch tests as one of the three tests "which commonly let the physician down when he tries to identify the cause of mouth, stomach or intestinal complaints with food allergy." Throughout the book, an endless number of proprietary remedies are recommended for this and that disease. While this may please the manufacturers, it encourages a disregard for the effective and less expensive drugs to be found in the United States Pharmacopeia.

Despite this critical review, there is much of good sound value in the book. The chapter entitled "Management of the Patient with Gastric Cancr," for instance, is particularly good reading. From the publisher's standpoint the book is attractive and easy to read—type, paper, format and illustrations being excellent.

Biophysical Research Methods. Prepared by a Group of Specialists under the Editorship of Fred M. Uber. Cloth. $9.50. Pp. 667, with illustrations. Interscience Publishers, Inc., 215 Fourth Ave., New York 3; Interscience Publishers Ltd., 2a Southampton Row, London, W.C.1, 1950.

This is an exceedingly interesting and unusual book. The opening chapter, by the editor, is perhaps the most unusual feature. Entitled Avoid Fruitless Experiments, it outlines in simple language, with the help of well chosen and amusing cartoons, the methods and philosophy of science. The reader is told how scientific discoveries are made, how research problems should be chosen, how instruments should be used, how measurements should be made and how data should be analyzed. Some might quarrel with the assertions of the author, but this appears to be one of the most thorough discussions of this subject in a book on methods.

Each of the subsequent chapters in the volume is prepared by experts in particular fields of biophysical research. Among the subjects discussed are osmotic pressure measurements; centrifugation; calorimetric measurements; quick freezing and quick drying; ultrasonic vibrations; when to use special microscopes, roentgen rays, electrons, neutrons and alpha particles, and stable and radioactive tracers.

The book has been edited carefully and shows none of the unevenness that often characterizes books with multiple contributors. Each chapter opens with a clear but brief definition of the subject matter and terms. A presentation of important historical and theoretical concepts is given. The applications of the methods discussed are illustrated; the instruments, their limitations and applications, are critically reviewed, and the methods of making the actual measurements are outlined.

Certain chapters deserve special mention, since the subjects seldom are covered adequately in textbooks or monographs. E. G. Pickels discusses the subject of centrifugation in an interesting and readable fashion. Both the ordinary centrifuges and the ultracentrifuges are discussed, the mathematical theory following the description of the instruments and preceding excellent discussions of the practical use of various centrifuges and the interpretation of results in experiments involving their use.

Earl W. Hosdorf discusses the theory and applications of quick freezing and quick drying, relatively new technics in biophysical research. This is a subject not frequently discussed in other similar books. The principles involved in these technics are adequately presented; the apparatus and its operation are described, and some of the major accomplishments in biologic research made possible by these methods are reviewed.

The chapter "When To Use Special Microscopes," by Oscar W. Richards, is also an unusual and extremely useful contribution. Bright field and dark field microscopy are described and illustrated, and the handling of opaque specimens, ultramicroscopy and fluorescent and phase microscopy are adequately treated. Also included is a discussion of accessory equipment and recording methods. This chapter is useful not only to biologists but to engineers, minerologists and any other scientists who have occasion to use a microscope.

Adolph Voigt discusses radioactive tracers completely and objectively. Fred Uber presents a comprehensive discussion of the use of stable isotopes as tracers, a subject which is of great interest even though the radioactive isotopes appear to make the scientific headlines.

One of the unique features of this book is the extraordinary balance between theoretic discussions and practical applications. One cannot help being impressed with the thorough acquaintance of the authors with the fields they discuss from actual experience with the instruments described and at the same time with their knowledge of the fundamental principles underlying the methods presented.

This volume should be read by every biologist using physical measurements in his work. It is probably one of the best books available on biophysical measurements, and the organization of the material and its editing are outstanding.

A Story of Nutritional Research: The Effect of Some Dietary Factors on Bones and the Nervous System. By Sir Edward Mellanby, G.B.E., M.D., Sc.D., Secretary of the British Medical Research Council, London. The Abraham Flexner Lectures, Series Number Nine. Cloth. $5. Pp. 454, with 73 illustrations. Published for Vanderbilt University by Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1950.

Sir Edward Mellanby is eminently qualified to tell the story of the development of knowledge of the physiology and pathology of vitamins A and D, since he and his pupils have been among the major contributors to this study. The story of the investigations, which commenced with Mellanby's studies on the role of oxidation in the etiology of rickets in 1915 and progressed to the present concept of the actions of vitamins A and D on bone formation and growth, is fascinating and is entertainingly told in this volume. The book opens with an account of the origin of the problems, the solutions of which Mellanby so successfully sought. He soon became more intrigued with the problem of the neurologic lesions in vitamin A deficiency than he was in the primary problem of the etiology of rickets. In the first half of this volume are detailed the steps whereby he demonstrated that vitamin A was responsible for the orderly control of osteoblast and osteoclast activity in bone growth. He showed that the neurologic lesions in vitamin A deficiency were due to bony overgrowth without corresponding osteoclastic activity at essential sites, particularly in the bony covering of the central nervous system. The cavity containing the nervous tissue thus did not enlarge in proportion to the growth of the nervous tissue, which resulted in compression of important channels through which cranial and peripheral nerves pass. The observed neurologic lesions, xerophthalmia and the retinal changes in vitamin A deficiency are explained adequately by this concept.

In the second half of this volume another fascinating problem is dealt with, that of the cause of the observed interference with the functional activity of vitamin D by cereals. It has long been known that cereals appear to interfere with proper calcification of the bones. Mellanby describes in a logical sequence the investigations which have led to present day knowledge. The demonstration that cereals contain phytate, which opposes the action of vitamin D by combining with calcium in the alimentary tract to form an insoluble compound, explains why cereals appear to interfere with calcium metabolism. Vitamin D, on the other hand, was demonstrated to control the conversion of phytate to inorganic phosphate, thus rendering most of it harmless. The balance between these physiologic antagonists determines the extent of calcium absorption and retention.

This volume is beautifully written, and both clinicians and biochemists interested in nutrition will find it of immense interest.

The Chemistry and Physiology of Growth. By J. H. Northrop and others. Edited by Arthur K. Parpart. Cloth. Price, $4.50. Pp. 293, with illustrations. Princeton University Press, Princeton, N. J., 1949.

In 1946 a conference on the chemistry and physiology of growth was held at Princeton University, at which time a number of authorities interested in cell growth and development participated. Rather than publish a "proceedings" of this conference, the participants were given an opportunity to alter their papers in the light of the discussion developed at the conference. This book reflects the wisdom of that procedure.

Ten topics are discussed. The opening chapter provides a discussion of enzymes and the synthesis of proteins. John Northrup considers in some detail the present concepts of the formation of normal proteins and then proceeds to the question of the formation of viruses and antibodies. He attempts to unify the various concepts of the synthesis of different proteins into one general scheme. Molecular structure and growth are discussed briefly by Francis Schmitt, the briefness being due to the wide gaps in knowledge of this subject.

The next two chapters, plant growth hormones and unidentified vitamins, deal with factors which influence growth. The field of vitamins is still chaotic with a multitude of new "factors" being discovered almost weekly and others being discarded or identified with some previously discovered "factor." The kinetics of growth of micro-organisms is ably presented by C. B. Van Niel. This field of study is just in the developmental stage, but the author points the direction in which effort should be expended.

The chapter on differential growth, by Paul Weiss, is the most thought-provoking in the book. Weiss takes to task those who use high-sounding terms to disguise vague concepts. He urges an analytic approach to the problem of differentiation and a careful, objective definition of terms. He offers such definitions and vigorously indicates where and how further investigations should proceed.

Other chapters deal with cellular metabolism, problems of organization, neoplastic abnormal growth and the adrenal gland as a regulatory factor. An excellent set of references follows each chapter. This volume constitutes a critical review of knowledge of the fundamental processes of growth. Little new material is presented, but the authors have successfully integrated preceding work on an amazingly complex subject and have presented it in a readable and understandable fashion. This volume should be welcomed by students and research workers interested in any aspect of the problem of growth.

Syphilis: Its Course and Management. By Evan W. Thomas, M.D., Professor of Clinical Medicine, New York University College of Medicine, New York. Foreword by John F. Mahoney, M.D., Director of Venereal Disease Research Laboratory, United States Public Health Service. Chapter on "Public Health Aspects of Syphilis" by Theodore J. Bauer, M.D., Chief, Venereal Disease Division, United States Public Health Service. Cloth. Price, $5.50. Pp. 317, with 67 illustrations. The Macmillan Company, 60 5th Ave., New York 11, 1949.

The new and revolutionary developments in the treatment of syphilis have repudiated long-established concepts of the disease to such an extent that this book, which clarifies and summarizes the present situation, should be gratefully received. Thomas, who from every standpoint is eminently qualified to make such a summary, has written an up-to-date book that is informative, practical and authoritative. In simple conversational language he states his opinions on controversial matters without qualification, and he makes direct recommendations with detailed schedules for the treatment of all phases of syphilis, e. g., for early infections, the neurosyphilitic, the cardiac, and the pregnant woman with "positive blood." Thomas, one of the first to embrace rapid treatment methods of syphilis (many of which he introduced), in this book places his complete confidence in penicillin for the treatment of syphilis in all its manifestations. While emphasis is placed on therapy, other phases, such as the clinical course of the disease, the causative agent, the interpretation of quantitative serologic tests and cerebrospinal fluid changes, biologic "false positive" reactions, the principles underlying the various treatment methods, therapeutic paradox and public health aspects are all discussed fully. The book is compact, contains an excellent bibliography and is well indexed. The type is large and is on good paper. The book is recommended highly to both practitioner and student.

Office Orthopedics. By Lewis Cozen, M.D., F.A.C.S., Assistant Professor of Orthopedic Surgery, College of Medical Evangelists, Los Angeles. Cloth. $5. Pp. 232, with 156 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1950.

A considerable part of the practice of any orthopedic surgeon takes place in his office. In this time of pronounced shortages of hospital beds, a physician cannot justify referral of patients to the hospital for conditions which can be treated effectively in a well equipped office. The author has specified in his preface that the purpose of this small book is to describe what may be done in the office or clinic of an orthopedic surgeon. This volume is not intended to take the place of the more extensive textbooks or reference books covering operative technics or general principles of orthopedic surgery. It is intended primarily for the general practitioner who is constantly being asked to treat minor disabilities of the foot or knee or back. However, the author has also included such procedures as the care of the congenitally subluxated or dislocated hip; he describes other procedures which should not be undertaken by those who have not had extensive training. Among the latter are the technic of stellate ganglion block with procaine hydrochloride and anesthesia by lumbar sympathetic block.

There are chapters on use of plaster of paris, physical therapy, the fitting of a prosthesis, and how to examine orthopedic cases for the law court. These are all subjects about which every physician should know something. There also are sections on the foot, the back, the ankle, the knee and the shoulder. The technics illustrated for strapping backs, the types of braces shown and the methods for supporting the arches of the feet would be unacceptable to many orthopedic surgeons. The illustrations do not include some of the latest innovations and developments in appliances. It is gratifying to note that Canadian type crutches for patients who have sufficient arm strength to use them are recommended and that the advantages of the Frejka splint in the care of congenital subluxation of the hip are adequately illustrated.

Freer use of illustrations will improve the value of this book when it is revised. Physicians in general practice, industrial surgeons, interns and residents on orthopedic services and pediatricians who must advise orthopedic patients in outpatient clinics or in their own offices will find much helpful information in this book.

I Tumori del sistema reticolo-endoteliale. Dal Prof. Armando Businco. Paper. 1,400 lire. Pp. 150, with 100 illustrations. Licinio Cappelli, Bologna, 1949.

This book originated in a paper delivered to the Annual Meeting of the Italian Society of Gross Pathologists in Bologna in 1948. After a brief historical introduction, the author classifies the tumors of the reticuloendothelial system as reticuloendotheliomas (reticulohistiocytomas), endotheliomas and mixed tumors. A discussion of these follows, with special regard to localization and a brief note on reticuloendothelial tumors in animals. In the last part there are reports of cases observed by the author himself. His series consists of 20 autopsies and 127 biopsy specimens. An extensive bibliography, quoting especially Italian and French authors, is added.

While numerous pathologists will probably disagree with the author's concept of reticuloendothelial tumors, most of them will appreciate the good pictorial material and the excellent compilation of Latin literature pertaining to this subject.

Proceedings of the First Clinical ACTH Conference. Edited by John R. Mote, M.D., Medical Director, Armour Laboratories, Chicago. Cloth. $5.50. Pp. 607, with 414 illustrations. The Blakiston Company (Division of Doubleday & Company, Inc.), 1012 Walnut St., Philadelphia 5, 1950.

This volume is a compilation of the work of many investigators during the scant two and one-half years that pituitary adrenocorticotropic hormone (ACTH) has been available. The papers included were presented in October 1949 at the Clinical ACTH Conference held for the purpose of exchange of information on the metabolic, physiologic and clinical effects of the pituitary adrenocorticotropic hormone. Although many of the presentations are only status reports, the book is at present the most important collection of information on the fundamental and possibly far reaching effects of adrenal cortical stimulation.

It is difficult to draw generalizations from a book containing 52 separate monographs; however, for conditions other than rheumatoid arthritis, gout and allergic diseases, too few cases are considered to permit final conclusions on the merits of adrenocorticotropic therapy. Many of the studies lack control series. The dangers of interpretation based on these early experiences can best be illustrated by an example from the text. In the study of the effect of the hormone on poliomyelitis, the investigators reported that after studying 14 patients, (7 in the ACTH treatment series and 7 in a parallel control series), it appeared that the ACTH group were definitely benefited. Had these results been prematurely reported, a totally false impression would have been created during the recent poliomyelitis epidemic, for, with increased numbers of patients studied in both groups, it became quite evident that there was no detectable difference between the results with ACTH treatment and the results in the control series.

Possibly the most important contributions are the many excellent metabolic studies of normal and abnormal states at all age levels and the development of indexes of adrenal cortical response. The book also contains the preliminary report of the metabolic effects of a protein-free peptide mixture derived from ACTH. This report raises hopes of eventual synthesis of a polypeptide with adrenocorticotropic activity.

A cross index of the contents would have been a valuable addition and a definite aid in the use of the book as a reference source.

The First Medical College in Vermont: Castleton 1818-1862. By Frederick Clayton Waite. Cloth. $5. Pp. 280, with 13 illustrations. Vermont Historical Society, State House, Montpelier, Vt., 1949.

The primary object of this book is to give intimate details of the activities of a prosperous and long-lived country medical college as a basis of understanding the operation and the many difficulties encountered by institutions of this type. Furthermore, although attention is focused primarily on the Castleton Medical Academy, reference to similar institutions are included, as is discussion of the conditions that applied generally to all rural (as distinguished from urban) medical colleges of the pre-War-Between-the-States period. The manner of presentation is interesting, and the author has made an excellent and well documented contribution in fulfilling these objectives.

The book consists of 15 chapters in which, among other topics, are described the original "proprietors," the trustees and faculty, the curriculum, student expenses, and the final closing of the institution in 1862. There are seven appendixes in addition to 2 catalogs listing graduates and nongraduates. The book is well indexed. This volume will be revealing and of interest to all who would like to add to their background knowledge of the "growing pains" incident to the development of medical education in this country from its inception to its present high level of accomplishment.

Synopsis of Hernia. By Alfred H. Iason, M.D., Attending Surgeon, Adelphi Hospital, New York. Illustrations by Alfred Feinberg, Instructor of Medical Illustration, Department of Pathology, College of Physicians and Surgeons, New York City. Cloth. Price, $6.50. Pp. 500, with 98 illustrations. Grune & Stratton, Inc., 381 4th Ave., New York 16, 1949.

This is a condensation of the author's earlier book on hernia, which was published in 1941.

In chapter 12, where the standard operation for reducible, indirect inguinal hernia is discussed, the author would have done well to stress the importance of repairing the transversalis fascia rather than emphasize the suturing of the cremaster muscle, which is rather unimportant. In the section dealing with "sliding hernia" a few words and an illustration dealing with the combined abdominoinguinal approach might well have been included. The chapter on inguinal hernia is particularly well written and illustrated.

On page 280 the statement is made: "Umbilical hernias are preeminently suitable for local analgesia." Figure 53 illustrates the injection of the analgesic solution. In this day of modern anesthesiology it would seem that only rarely would one encounter cases requiring local analgesia. Even the illustration just mentioned diagrammatically reveals the closeness of the needle to the bowel with possible bowel damage. Part 7

deals with diaphragmatic hernias. This section is well done. An illustration would have amplified the part dealing with the transpleural route.

This book is well written, easily read and adequately illustrated. It can be recommended as a reference for students, practitioners and specialists.

Medical Manual. By William Richard Feasby, B.A., M.D., Medical Assistant to the Superintendent, the Toronto Western Hospital, Toronto. Cloth. Price, $2.25. Pp. 162, with 3 illustrations. University of Toronto Press, Toronto 5, Ontario, Canada, 1948.

This is a pocket handbook that apparently was prepared for medical students and physicians, although the emphasis seems to be on material of particular concern to senior students and recent graduates or interns. Included are brief discussions on examination of patients, orders, diet and some clinical methods in common use, a tabular presentation of doses of drugs in common use, a few commonly used prescriptions, a table of immunization requirements for persons going abroad, nursing procedures and an alphabetic list of common diagnoses intended for the convenience of those who code their hospital cases according to the Standard Nomenclature of Disease. This pocket handbook probably will have some usefulness as a quick reference source, but its brevity will prevent wider acceptance. The type of print, the format and the index are satisfactory.

Biological Antioxidants: Transactions of the Third Conference, October 7-8, 1948, New York, N. Y. Edited by Cosmo G. Mackenzie. Associate Editors: Richard H. Barnes, Leslie Hellerman, and Karl E. Mason. Paper. $2.70. Pp. 146, with 6 illustrations. Josiah Macy, Jr., Foundation, 565 Park Ave., New York 21 (no date).

This book is a collection of 9 papers, with appropriate references, dealing with the antioxidant effect of various compounds in biologic oxidations. Two papers discuss the mechanisms involved in autoxidation and the mode of action of lipoxidase. Three papers deal with several phases of quinone-hydroquinone type systems, their general pharmacology, toxicology and their inhibition in oxidation. The effect on biologic oxidation of such groups of compounds as the tocopherols, flavonoids, androgens and estrogens is discussed in four chapters.

The book will be of interest to workers in the field of metabolism, since the papers as well as the discussions at the close of each chapter contain the ideas of authorities in the field.

Grundriss der Allergie: Theorie und Praxis. Von Dr. Med. Rudolf Abderhalden. Cloth. 14.50 Swiss francs; $3.75. Pp. 179, with 8 illustrations. Benno Schwabe & Co., Verlag, Klosterberg 27, Basel; Imported by Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1950.

The author planned to present a rapid orientation in allergy for the practicing physician and student. This brief résumé considers the general and special principles of allergic diseases. The completeness of coverage is truly remarkable, although at times this results in regrettably laconic treatment of important fields. Each chapter has alphabetically arranged, well chosen and up-to-date references. The author has displayed sound critical judgment in the evaluation of fads and improved methods. This book can be recommended for those who wish to obtain an authoritative introduction to the principles of allergy.

Community Health. By Laurence B. Chenoweth, M.D., and Whitelaw Reid Morrison, M.D., Sc.D. Third edition. Cloth. $3. Pp. 314, with 111 illustrations. Appleton-Century-Crofts, Inc., 35 W. 32nd St., New York 1, 1949.

This college textbook in public health measures up to the excellence of its two preceding editions. It is notable especially for brevity, conciseness and comprehensive coverage of its subject. In addition to 111 photographs, drawings or diagrams there are 11 statistical tables. The book has a good glossary and an adequate index. It is well documented with footnote references to authorities and with a bibliography following each chapter, suggesting further channels of reading and study. It can be recommended as a textbook for any college course in hygiene or as a reference volume on that subject.

Medical Books, Libraries and Collectors: A Study of Bibliography and the Book Trade in Relation to the Medical Sciences. By John L. Thornton, A.L.A., Librarian, St. Bartholomew's Hospital Medical College, London. With an Introduction by Geoffrey L. Keynes, M.A., M.D., F.R.C.S. Cloth. 35s. Pp. 293. Grafton & Co., Coptic House, 51 Great Russell St., London, W.C.1, 1949.

In this study of medical bibliography and the book trade in relation to the medical sciences one may find information on medical literature before the invention of printing, on medical incunabula, medical books of the sixteenth century, seventeenth century medical books, medical books from 1700 to 1799, the development of medical societies, the growth of medical periodical literature, medical bibliographies and bibliographers, private medical libraries, medical publishing and book selling and on medical libraries of today. Two appendixes provide also chronologic lists of medical societies and institutions and of medical libraries and institutions housing large medical collections. The illustrations offer an interesting supplement to this detailed reference source. The printing is not particularly easy to read, but the book obviously is not intended for light reading.

The Writer and Psychoanalysis. By Edmund Bergler, M.D. Cloth. $3.50. Pp. 265. Doubleday & Company, Inc., Garden City, New York; 14 W. 49th St., New York 20, 1950.

This author of this book is a prolific writer. He is also a prominent psychotherapist and has had the opportunity of examining under the psychoanalytic microscope thirty-six writers who apparently suffered from various degrees of "writer's block." This combination of training and experience should and does make the author's theories, deductions and conclusions interesting to read even though the subject matter may prove to be somewhat controversial. The book represents an elaboration in one volume of a large number of Dr. Bergler's previously published papers in scientific journals. The present volume will be of interest to both psychotherapists and writers. It is well written but does not have an index or an organized bibliography.

Babe in a House. By Mollie Stevens Smart. Cloth. $2.75. Pp. 212, with Photographs by Louise and Bob Van der Meid. Charles Scribner's Sons, 597-599 5th Ave., New York 17; 23 Bedford Sq., London, W.C.1, 1950.

This book offers ultramodern good advice about babies and how to live with them. It is handsome and attractive, beautifully illustrated with photographs of baby and family and printed on fine paper in large, well spaced type. Its philosophy is a middle-of-the-road, sensibly charted course of behavior that avoids the old-style, rigid regimentation in a baby's life, which led to conflicts and heartaches, as well as the extremes of letting baby do everything in his own way without hindrance. The appropriate place for fathers and grandparents is indicated deftly. Babies ought to be a great deal happier, mothers less worried, fathers more useful and grandparents less disgruntled, if this charming book is liberally used as a gift to the families of new babies.

Medical Meeting. By Mildred Walker. Cloth. $3. Pp. 280. Harcourt, Brace and Company, 383 Madison Ave., New York 17, 1949.

A medical meeting at which a physician presents a paper on a new drug is the central theme of this novel by a well known author. It provides a test for the physician and his wife, the facets of which are portrayed in an entertaining style. As might be expected in a novel, love is woven into the story. Whether it, or the portrayal of what may come from a medical crisis, serves as the excuse for this story must remain for the readers to decide. A melodramatic touch has not been ignored, but in general this book should prove entertaining for physicians and the laity.

Medicine Could Be Verse: Humorous Poems Mainly About the Profession. By Charles G. Farnum, M.D. With an Introduction by Strickland Gillilan. Cloth. $3. Pp. 127. Exposition Press, 251 Fourth Ave., New York 10, 1949.

This is a collection of poems about the medical profession. Most are intended to be humorous; some are more serious.

QUERIES AND MINOR NOTES

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

ALUM CYSTS AFTER TRIPLE IMMUNIZATIONS

To the Editor:—An apparently healthy male child 21 months of age who received triple immunizations in the Autumn of 1949 has had four or five recurrences of pronounced swelling of the arms centering about the subcutaneous nodules remaining at the injection sites. The swelling is sufficient to make the shirt sleeves too tight. Has periodic severe swelling of the sites of diphtheria injections, pertussis and tetanus immunization at intervals of about once a month been observed? If so, what could be the mechanism of such a reaction? E. E. Emerson, M.D., Osakis, Minn.

ANSWER.—If after four or five months nodules resulting from triple immunizations are of considerable size they are possibly alum cysts. Some believe that when alum-precipitated antigens are injected deeply into the muscle instead of subcutaneously the formation of such cysts "is almost completely eliminated" (Sauer, L. W.: *Illinois M. J.* 97:73 [Feb.] 1950). Periodic swelling occurring over such a long period as that described apparently is very uncommon. Unusual irritation or trauma of the nodules may account for repetition of the swelling caused by alum deposits.

ANXIETY OR CHOREA?

To the Editor:—Will any condition other than chorea cause nervousness, grimacing, twitching, lack of coordination and hyperactive reflexes in a previously healthy girl aged 12? Results of complete physical, roentgen ray and laboratory examinations, including determination of the sedimentation rate, are within normal limits. The neurologist concurred in diagnosis, suggested bed rest, sedative and salicylates. Is fever therapy of value (*The Journal*, July 10, 1937, p. 111)? What other method of therapy may be employed? Ralph L. Gerrell, M.D., Clarion, Iowa.

ANSWER.—While it is true that twitching, grimacing and lack of coordination in a girl aged 12 are more commonly evidence of chorea than of any other illness, it is also true that in chorea the deep reflexes would be expected to be reduced or completely suppressed. Since the deep reflexes are active, it is at least possible that the appropriate diagnosis is anxiety and not Sydenham's chorea. At present the most effective treatment for chorea is bed rest and the administration of salicylates and phenobarbital. Fever therapy is not now in use, since it does not appreciably shorten the period in which a child is kept in bed and there is no evidence that it has any specific value in preventing the onset of rheumatic heart disease.

AUTOSENSITIZATION DERMATITIS

To the Editor:—What is meant by autosensitization dermatitis, and how is it treated? Paul Russell, M.D., Inglewood, Calif.

ANSWER.—Autosensitization is a concept which states that a person may become sensitized in one or more of his organs to a substance elaborated in or on his body from his own tissue proteins. Autosensitization dermatitis is a dermatitis arising from sensitization to breakdown products of one's own body. An example of this that usually is cited is the one in which a person with chronic dermatitis of the legs accidentally injures the leg. An acute dermatitis then develops at the site of the injury accompanied shortly thereafter with a generalized eruption of varying degree characterized usually by symmetry, follicular accentuation and discomfort from itching. This concept of autosensitization, although it is rather well established, is not accepted by all dermatologists. Some claim that bacterial allergy probably plays a role in such cases. So-called sensitization dermatitis is treated according to the acuteness of the eruption. Ordinarily soothing applications, such as wet packs of 0.5 per cent solution of aluminum subacetate, and calamine lotion to the less acutely affected areas afford relief. In the final stages bland ointments should be applied to the scaly areas.

BANG'S DISEASE

To the Editor:—Have there been any cases of Bang's disease transmitted through eggs of chickens when they were fed milk from an infected cow? M. D., Wyoming.

ANSWER.—There is some evidence that chickens may be infected with brucella under natural conditions, but there is no instance of a human being's contracting the disease through the ingestion of eggs.

SEXUALITY IN A MALE CHILD

To the Editor:—A boy aged 6 years while playing at school knocked down a girl of his age, pulled down her panties and was found to be kneeling over the little girl. The school principal in investigating the incident, learned that this boy at the age of 4½ years was found to be "playing doctor" with a girl of his own age and while examining the little girl had caused her to cry. The mother consulted physicians. The first advised her to have her boy examined and treated by a psychiatrist. The second advised against such procedure. The incidents have resulted in embarrassment to all concerned. The boy is bright, healthy and well developed. However, he has undescended testicles and his penis is small for his age. Can the little boy's behavior be due to a sexual abnormality? How should a problem of this nature be handled from the medical point of view? The boy's behavior toward his younger sister has been normal as far as the parents know. M.D., New York.

ANSWER.—The true significance of the problems posed by the behavior of the patient can be assessed only by a detailed social and psychiatric history. Sexuality develops *pari passu* in children in much the same way as do other modalities of physiologic and psychologic behavior. By the same token, arrests, deviations and precocities are seen clinically. The psychopathologic significance of such exploratory curiosity as this patient evidences requires a careful psychiatric appraisal. The management of this behavior disorder depends entirely on such an evaluation. While the physical stigmas of endocrinologic immaturity are not in themselves causative of this behavior, they may well play an important symbolic role in the patient's aggressive conduct.

POISON IVY DERMATITIS

To the Editor:—Poison ivy dermatitis is frequent in this section of Maryland. I have had therapeutic success and at the same time pitiful failures with practically every one of the following measures: ivyol® injections (proprietary solution in olive oil of extract from leaves of Rhus toxicodendron), magnesium sulfate (epsom salt) compresses, rhulitol® (an aqueous glycerin-alcohol antipruritic solution containing tannic acid 5 per cent, isopropyl alcohol 37 per cent, chlorobutanol 1 per cent and phenol 0.4 per cent), calamine lotion and ointment and antihistaminic preparations. Often when I start treatment with a drug that has given some previous success, I find that one or two patients do not respond at all to that particular treatment. John F. Noguera, M.D., Kingsville, Md.

ANSWER.—The treatment of poison ivy dermatitis is governed by the same principles that guide the treatment of any other dermatitis due to external irritation. Much depends on the acuity, the degree of discomfort, the extent of the eruption and the emotional stability of the patient.

The colloid bath usually gives comfort when there is a widespread itchy eruption. Cool wet dressings of 0.5 per cent aluminum subacetate solution or boric acid solution are applied to vesicular or edematous areas. Powdery suspensions of the calamine lotion type are applied to papular areas. Calcium gluconate or strontium bromide, administered intravenously, usually affords immediate sedation; a prolonged effect can be obtained by the use of phenobarbital. Antihistaminic preparations are also recommended for their sedative effect.

CORTISONE AND ACTH

To the Editor:—What part of the pituitary is used in the manufacture of ACTH? If cortisone is obtained from the adrenals, how is it distinguished from epinephrine or cortin? How is it supposed to function? What is the nature or function of compound E? I understand that desoxycorticosterone is obtained from the adrenals. How does it differ from cortisone? H. R. Livengood, M.D., Elizabeth, N. J.

ANSWER.—Pituitary adrenocorticotropic hormone (ACTH) is a protein or protein derivative secreted by the anterior pituitary. This hormone stimulates the adrenal cortex to produce not only cortisone but a number of other related steroids normally produced by the adrenal gland. Hog pituitaries have been found to have a high content of pituitary adrenocorticotropic hormone and for this and other reasons are used for the extraction of this hormone.

Cortisone in the pure form is not obtained commercially by extraction from adrenal glands. This hormone, more accurately

designated as 17-hydroxy-11-dehydrocorticosterone, is synthesized from bile steroids. Investigations are now under way to determine whether it can be synthesized from certain plant sterols which are more abundant and less costly than bile.

Compound E is the name originally given by Kendall to cortisone, which is one of a large number of adrenal cortical steroids. It appears to influence carbohydrate metabolism and favors glycogen deposition by increasing gluconeogenesis and by decreasing the peripheral utilization of carbohydrate, in part by increasing the utilization of fat.

Desoxycorticosterone is also one of the adrenal steroid hormones. This steroid differs from cortisone in that it lacks the hydroxyl group at the 17 position and the oxygen atom at the 11 position in steroid ring structure. Desoxycorticosterone is prepared synthetically, usually from plant sterols. This hormone affects electrolyte metabolism, particularly sodium and potassium, but has little, if any, effect on carbohydrate metabolism.

DIET AND BODY WEIGHT

To the Editor:—**I casually stated that it does not matter what one eats so long as one eats less of it; then I added that with no diet can one gain more weight than the total weight of the intake of food (solids and liquids) and oxygen. I was amazed when three different physicians argued that it is possible to have the total weight exceed the foregoing sum as the result of special metabolic processes and cell division. They cited the increased weight in pregnancy even when the diet is carefully controlled and increases which occur in congestive cardiac failure in which the patient has no appetite at all but seems to gain weight out of proportion to the intake of food or water. I would be grateful for an opinion.**

A. Wolfson, M.D., Newark, N. J.

ANSWER.—The human body does not violate the law of the conservation of energy. A patient would not gain more than the weight of the nutrients he absorbed; in fact, he would undoubtedly gain less because of elimination of urine and feces. An undue gain of weight in pregnancy could be caused by a reorganization of preformed water. That is, fat, or adipose tissue (with about 10 per cent preformed water) may be mobilized to aid in the formation of the growing tissue (with about 75 per cent preformed water) of the fetus. Even in this case, the source of this preformed water must be either water per se or water in foodstuffs. Thus the weight gain would be accounted for in the total weight of nutrient intake. In congestive cardiac failure an excess of water and sodium is retained in the tissues. Therefore an accurate balance study should show the cause for excess weight gain.

Weight loss is proportional to caloric intake. It is possible to calculate a caloric intake to give a predicted weight loss over a period of time and to feed such a diet. Newburgh has shown that apparent failure to lose weight on a carefully controlled regimen is due to retention of water. If the diet is continued there will be a rapid loss of weight when there is a depletion of this retained water. "Body tissue can be accumulated in only one way. The inflow of energy must exceed the outflow." (Newburgh, L. H.: Some Fundamental Principles of Metabolism, Ann Arbor, Mich., Edwards Bros., Inc., 1948, p. 35.)

PRECOCIOUS PUBERTY

To the Editor:—**A girl now 8 years of age was normal at birth; she had the usual diseases of childhood, a fractured leg in 1945 and a fractured arm in 1946 with good recovery. One year ago she had a ruptured appendix with abscess which was drained surgically. This was followed nine months later by repair of incisional hernia. Now she has slight but definite breast enlargement and dark curly hair on the pubis. Her mother menstruated first at age 11. Should this development be considered physiologic, and if not what tests should be made to rule out adrenal or other tumor?**

Charles H. Morhouse, M.D., Randolph Field, Texas.

ANSWER.—The precocious puberty in this patient may be caused by any one of the following conditions: premature onset of the normal mechanism involved in puberty; a tumor of the adrenal cortex; a tumor of the ovary, or a hypothalamic lesion, setting in motion prematurely the mechanism of puberty by pituitary stimulation. The following measures are advisable: (1) stereoscopic roentgenograms of the skull and any other studies that appear indicated to rule out a tumor in the hypothalamic area of the brain; (2) intravenous pyelogram and possible perirenal insufflation of air to exclude an adrenal tumor, and (3) careful rectal examination to try to exclude an ovarian tumor. Puberty may begin at an abnormally early age without any tumor. In these circumstances, persons grow more rapidly than is normal and become unusually tall for their age, but because of premature closure of epiphyses, they are eventually somewhat short.

PREGNANCY AND THE RH FACTOR

To the Editor:—**A white woman aged 34, about four months along in her second pregnancy, has just recovered from an episode of painless vaginal bleeding. She was hospitalized and found to be Rh negative, her husband being Rh positive. In 1940 this patient delivered a 4½ pound (2,041 Gm.) fetus of about seven month gestation which lived only four hours. Please describe the management of this case as regards (1) the Rh factor, (2) the possibility of another premature birth due to this factor and (3) the management of the newborn.**

M.D., Florida.

ANSWER.—It is extremely unlikely that this patient's past obstetric complications were due to the Rh factor. It is significant that no mention is made in the query concerning tests for Rh antibodies. The fact that an expectant mother is Rh negative and her husband Rh positive will not give rise to complications so long as the expectant mother has not become sensitized to the Rh factor. Rh sensitization hardly ever occurs during the first pregnancy unless the expectant mother has been sensitized by a transfusion or an intramuscular injection of Rh-positive blood. Moreover, Rh sensitization when it does occur produces a hemolytic blood disease in the Rh-positive fetus, so that the baby is either stillborn in severe cases or when born alive exhibits manifestations of erythroblastosis. There is no convincing evidence that Rh sensitization can bring about miscarriages or premature births.

1. The patient should be tested without delay for Rh antibodies to determine whether or not she has become sensitized to the Rh factor. At present in every large hospital and blood bank there are technicians trained to perform this type of work. It is also helpful to perform complete Rh-Hr tests on the husband, since these may indicate whether he is homozygous or heterozygous. If the tests for Rh antibodies are negative, they should be repeated after the sixth month at four to six week intervals until term. If the subsequent tests also do not show Rh antibodies, then one can predict with reasonable certainty that the expected baby will not be erythroblastotic. 2. The chance of another premature birth depends on what caused the premature birth in the first pregnancy. This is an obstetric and gynecologic problem rather than a serologic problem. 3. Should the patient become sensitized to the Rh factor, so that an erythroblastotic baby is to be expected, arrangements can be made for treating the baby at any one of a number of centers specializing in this type of work. For example, Drs. Louis K. Diamond and Robert Allen are treating erythroblastotic babies at the Children's Hospital in Boston, while Drs. Alexander S. Wiener and Irving B. Wexler are handling such cases at the Jewish Hospital of Brooklyn in Brooklyn, N. Y. Moreover, arrangements can be made with these centers for mailing blood samples for Rh antibody tests during pregnancy, in case there is no local laboratory doing this type of work.

FRACTURE OF ASTRAGALUS

To the Editor:—**Where can I obtain information on fractures of the superior articular surface of the astragalus? A patient had a fracture of a most unusual type. Several orthopedists have told me that they never heard of such a fracture.**

A. L. Berndt, M.D., Portsmouth, Ohio.

ANSWER.—Modern search of all injuries by roentgenogram brings hitherto unrecognized fractures to light daily. Chip fractures of the superior articular surface of the talus are well known. The questioner may search in the following references:

Ciccone, R., and Richman, R. M.: The Mechanism of Injury and Distribution of 3,000 Fractures and Dislocations Caused by Parachute Jumping, J. Bone & Joint Surg. **30-A:** 77 (Jan.) 1948.

Weir, D. C.: Astragalus Fracture: Avascularizations of Astragalus, Am. J. Roentgenol. **57:** 355 (March) 1947.

Ellis, V. H.: Astragalus Fractures: Methods of Treating Fractures of Neck of Talus, Proc. Roy. Soc. Med. **39:** 711 (Sept.) 1946.

Barcat, J. R., and Lavenant: Astragalus Fractures: Orthopedic Treatment with Good Results: Case, Mém. Acad. de chir. **72:** 162 (March 2-April 3) 1946.

Travelli, L.: Astragalus Abnormalities: Supernumerary Bones of Dorsal Astragalar Region, So-Called Secondary Astragalus, Arch. Orthop. **57:** 146 (March) 1942.

The following textbooks will give information on the talus:

Judet, H.: Traité des Fractures des Membres: ed. 2, Paris, L'Expansion Scientifique Francaise, 1922.

Speed, K.: A Textbook of Fractures and Dislocations Covering Their Pathology, Diagnosis and Treatment, ed. 4, Philadelphia, Lea & Febiger, 1942.

Key, J. A., and Conwell, H. E.: Management of Fractures, Dislocations and Sprains, ed. 4, St. Louis, C. V. Mosby Company, 1946.

Lewin, P.: The Foot and Ankle: Their Injuries, Diseases, Deformities and Disabilities, Philadelphia, Lea & Febiger.

Watson-Jones, R.: Fractures and Other Bone and Joint Injuries, ed. 1, Baltimore, William Wood & Company, 1946.

CHRONIC BLEPHARITIS

To the Editor:—A man has chronic conjunctivitis and blepharitis of ten years' duration. He has consulted numerous skin and eye specialists without benefit. Local and systemic chemotherapy seem to be of no avail. Autogenous vaccines (Staphylococcus aureus is the only pathogen isolated) used in two courses of treatments and roentgen ray and foreign protein treatment have been unsuccessful. Allergy studies yielded no information of importance. Is there any new treatment for this debilitating affliction?

William J. Schirmer, M.D., Elizabeth, N. J.

ANSWER.—Treatment of chronic conjunctivitis and blepharitis requires painstaking attention to hygiene and careful application of medicine in the form of solutions and ointments. The conjunctivitis usually is secondary to chronic disease of the marginal lid glands. As a result of oversecretion from the swollen glands, many of which are infected by staphylococci or streptococci, the lashes are matted with mucus and pus which spread onto the conjunctiva and the skin of the eyelids. The application of antiseptic solutions and ointments and the use of vaccines do little good unless the lid glands are frequently emptied by pressure. A usually successful method of treatment is as follows:

At intervals of eight to twelve hours the lid glands should be emptied by pressure with the nail side of rotating thumbs, applying enough pressure to empty the glands of excess mucus and pus. This procedure, when done correctly, causes some pain but is essential in the treatment of chronic blepharitis. After expression of the lid glands the conjunctival sac should be irrigated, the lashes carefully cleansed, dead lashes epilated and the skin of the eyelids thoroughly cleansed. A solution of brilliant green, 1 per cent solution in 50 per cent alcohol, is then applied lightly to the skin of the eyelids and the lashes by means of a cotton wound applicator. After dipping the applicator into the solution, excess fluid must be blotted before applying the applicator to the eyelids in order to prevent the solution from running into the eye. The alcoholic solution must not come in contact with the conjunctiva, as it will cause severe pain. The brilliant green solution may be applied at night if the patient objects to the green coloration of the lids during the day time. In mild cases, application of brilliant green three times a week usually is sufficient. The conjunctivas need no special treatment. When the marginal blepharitis is under control, the conjunctivitis will disappear.

OSTEOPOROSIS

To the Editor:—A woman aged 73 had a fracture of the right hip and was kept in a cast for three months. Osteoporosis of the right leg followed, with two fractures of the femur. At present the leg is in a cast again. Is there any specific therapy for the osteoporosis?

Hans Benedict, M.D., Richmond, Calif.

ANSWER.—Osteoporosis in an elderly person is difficult to treat. One is confronted not only with the age of this patient and the possibility of senile osteoporosis but also with the osteoporosis of disuse due to months of immobilization in a cast. Also, one has to keep in mind the possibility that decalcification in the bone might be on the basis of an undiagnosed malignant lesion. Careful examination for possible malignant growth should be performed, and, if found, one should institute treatment accordingly. It might be well to examine the bone marrow obtained by sternal aspiration.

Orally given calcium is not especially effective for the treatment of any type of osteoporosis, little calcium being absorbed. One would hesitate to prescribe this type of medication for an elderly person, who of necessity must be confined, because of the possibility of formation of renal calculi.

Some investigators have reported on the use of aluminum acetate in the treatment of osteoporosis. The reason why it is sometimes effective has not been established. The prescription for this is as follows:

Solution of aluminum acetate	fl ʒ v
Syrup of tolu	fl ʒ iii
Honey in sufficient quantity	—
	to make fl ʒ xvi

One must be certain, on the filling of this prescription, that there are no impurities of lead in the aluminum acetate. Such impurities were found during the war and caused symptoms of lead poisoning in some patients. If lead is found in the aluminum acetate, the substance must be purified prior to the filling of the prescription. Likewise, physician is counseled to make sure that aluminum acetate and not aluminum subacetate is used, the latter being a poison when taken internally. To date there is no specific therapy for osteoporosis.

"SEMIHARD PELLETS OF A WHITE PEARLY SUBSTANCE"

To the Editor:—A patient has been coughing up semihard pellets of a white pearly substance. His sputum tests are negative for acid-fast bacilli. There has been no hemoptysis. What diagnosis is suggested?

Paul Russell, M.D., Inglewood, Calif.

ANSWER.—The usual cause, if not the sole cause, of such "semihard pellets of a white pearly substance" is tuberculosis. It results from an old healed, calcified and sometimes partly ossified tuberculous process. However, the phenomenon is not common. The exact nature and density of the pellets depends on the age of the lesions. Most cases occur only after ten or more years, and in a large percentage there has been a complete healing of the active tuberculous process. Liberation at a late date is due to pressure atrophy caused by the rigid calcified bodies pressing on adjacent tissues and bronchi until cavities appear around the calcifications. Openings which then appear in the bronchial walls liberate the small nests of calcifications. Sometimes the process occurs in lymph node lesions along the main bronchi.

There are usually various sized cavities left behind that may be sterile as far as tuberculosis is concerned but may be infected with other micro-organisms and cause abscesses. Sometimes hemorrhages may occur at the time of rupture. Some calcifications may block bronchi and result in atelectasis. There may be no ill results. Sometimes calcifications are liberated in active disease, especially in silicotic tuberculosis. Other conditions that can conceivably produce such a phenomenon are calcified tumors, abscesses and hemorrhages, but such a result is highly speculative.

AURICULAR FIBRILLATION IN A SENILE HEART

To the Editor:—What is the management and treatment, in geriatric cases of the fibrillating heart, with apical heart rates from 50 to 65 per minute or less?

M.D., California.

ANSWER.—The management and treatment of auricular fibrillation in the senile heart associated with a slow rate allow no set formula and will vary widely. However, certain definite drugs are indicated and helpful in the majority of instances: A rate of 50 to 65 per minute is not a contraindication to the cautious use of small and carefully watched doses of digitalis, provided that the associated bradycardia is not due to intraventricular block (as determined by the electrocardiograph). One grain (0.06 Gm.) daily of the powdered leaf of digitalis frequently restores a normal sinus rhythm. Persons who do not react favorably to a small but long-continued daily dose of digitalis frequently respond to atropine sulfate 1/150 grain (0.4 mg.) twice daily, or to tincture of belladonna 10 grains (0.6 Gm.) three times a day. Another drug which frequently affects favorably an auricular fibrillation in a senile heart with a slow rate is papaverine, 1 grain (0.06 Gm.) three times a day, particularly if there is clinical and electrocardiographic evidence of coexisting coronary disease. Quinidine sulfate, 3 to 6 grains (0.19 to 0.39 Gm.) daily, frequently restores a normal sinus rhythm in senile hearts with auricular fibrillation. Finally, a good result is often obtained with mild but continued sedation alone, phenobarbital, in doses of ½ to 1 grain (0.03 to 0.06 Gm.), being the drug of choice.

RHEUMATIC FEVER

To the Editor:—I made a diagnosis of rheumatic fever on a 17 year old girl six weeks ago. At that time the electrocardiogram was more suggestive of pericarditis than of rheumatic fever. On the initial examination a pericardial friction rub was heard; this disappeared the fourth day and has not returned. The joint symptoms, pulse and fever subsided within one week; however, she was kept at bed rest for four weeks. A repeat electrocardiogram after one month showed in brief a diphasic T wave in lead 1; a diphasic T wave in chest lead 3, and an inverted T wave in chest lead 4, all indicative of myocardial damage. The sedimentation rate was 10 mm. in one hour. Accordingly, she was allowed progressive ambulation. After one week of ambulation the temperature became 99.0 to 99.4 F. Mild transient joint symptoms appeared; the pulse rate remains 72 to 80. Repeated white blood cell count, sedimentation rate and pulse rate determinations are within normal limits but the temperature remains about 99.2 F. I believe that she can continue her ambulatory program but would like an opinion. She has a devitalized upper central incisor tooth; roentgenograms show no activity about the roots. Should this tooth be pulled as prophylaxis?

W. E. Jones, M.D., Sturgis, S. D.

ANSWER.—Your management of the patient appears to be excellent. In view of the close check maintained, the ambulatory program seems justified as long as the girl's progress is favorable. It may be an act of wisdom to postpone extraction of the tooth at this time.